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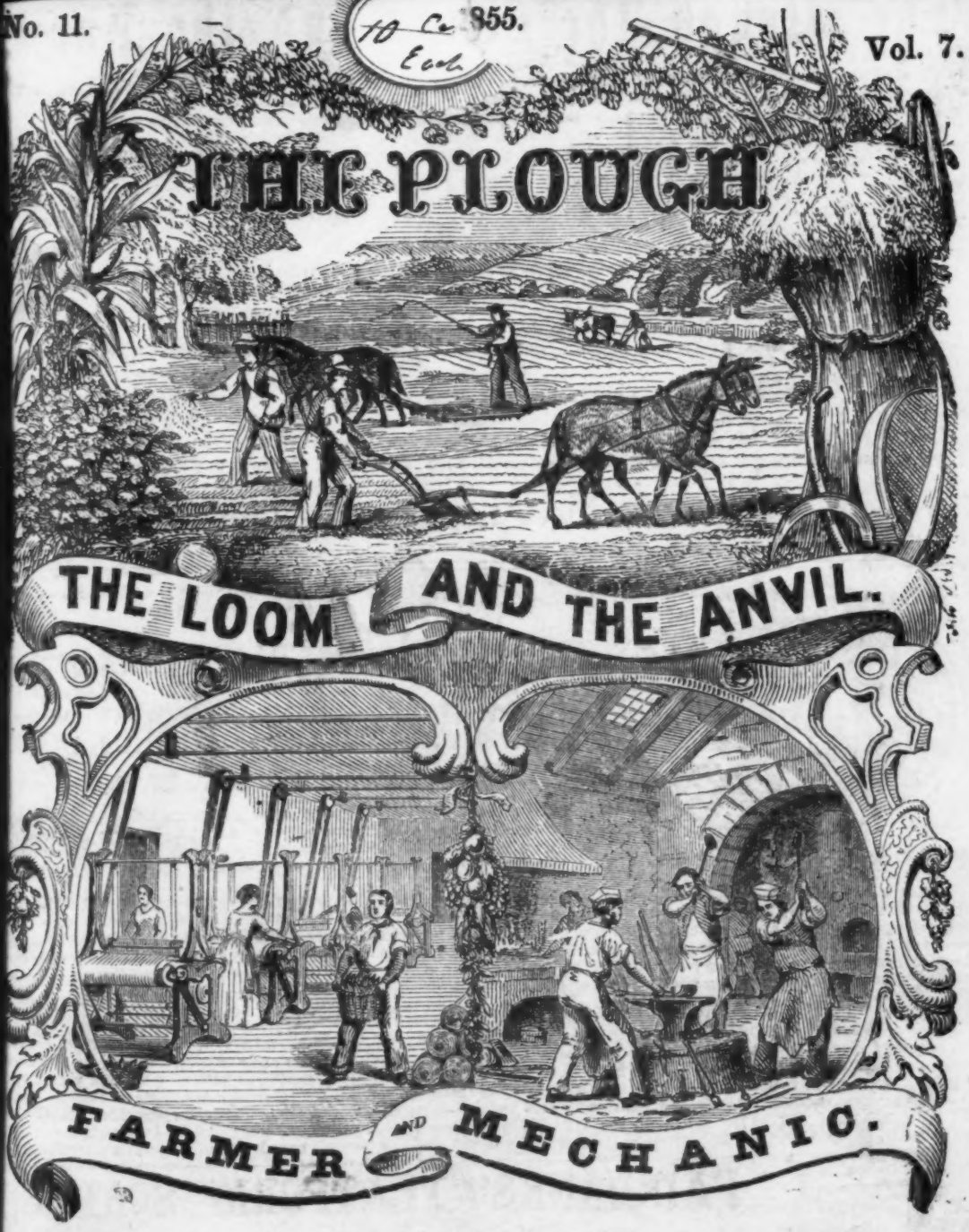

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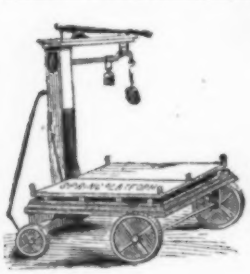

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New-York State Agricultural Society,
State Agricultural Rooms, Albany, Feb 20, 1854.

At the Show of the Society, held at Buffalo, in September last, a *Cattle-weighing Machine* was erected by Messrs. T. & B. Fairbanks & Co., of St. Johnsbury, Vt. The Scales of Messrs. Fairbanks were selected as most likely to give satisfaction to the exhibitors of fat cattle. The judges appointed on miscellaneous articles awarded the first premium of the Society for the machine which was erected by them,—and the judges on fat cattle, who superintended the weighing of all cattle exhibited, expressed their approbation of the great accuracy of the machine.

BENJ. P. JOHNSON Cor. Secretary.

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The Plough, the Loom, and the Anvil.

VOL. VII. MAY, 1855. No. 11.

AMERICAN INDUSTRY.

PRODUCTS SECTIONAL—VARIETY AMPLE—COMMERCE INDISPENSABLE.

THE wide extent and variety of surface of the territory of the United States not only permits but demands a very considerable variety in their agricultural products. It is true that, with few exceptions, the same vegetables may be grown for our own tables in almost every state; but it is also true that, for profitable culture on an extensive scale, different sections of the country, so various in soil and climate, require us to rely on those products which are best suited to the conditions presented. It is not caprice, nor fancy, nor fogyism, that in this sense, and to this extent, limits the farmers of one section to the production of cotton or of rice, and of another to sugar, and a third to cereals, etc. On one or another of these crops every farmer must rely as his chief dependence, however he may be disposed to indulge in variety, or to enter upon "improved systems." Regard should be had, to some extent, to the practice, now so popular on paper, of rotation in crops; but even in this, there is such a thing as adhering to the letter in utter disregard of the spirit, and to the injury of the farmer, if not of the farm.

Nor is this limitation in the number of profitable crops, in our view, entirely unfortunate and an evil. We have often advocated the doctrine, that every community should be, as far as possible, independent of all others. This doctrine is based on two elementary ideas, to wit: first, that it is hazardous, in time of war, to be dependent on an enemy; and the second, and the greater, this independence obviates the necessity of expensive carriers. But neither of these reasons applies with much force to parts of the same country. They have, and ought to have, a sense of mutual dependence. Such is, in fact, the case, to a very great extent. Statistical tables of the various products of this country furnish full illustrations and abundant evidence on this subject. Thus: of 108 millions of bushels of potatoes raised in the states, by the census of 1840, Maine and New-York raised 40 millions; of 14 millions tons of hay, worth about $97,000,000, New-York, Ohio, and Pennsylvania raised more than five millions; of 84 millions bushels of wheat, New-York, Pennsylvania, Ohio, and Virginia raised more than 52 millions; of 123 millions bushels of oats, those four great states raised over 68 millions; of about 4½ millions of dollars invested in fisheries, Massachusetts owns 3½. By the last census, more than two-thirds the entire crop of wool,

valued at near 16 millions, were produced in New-York and Ohio; of butter, the entire product being 50 millions of dollars, or 313 millions of lbs., New-York produced about 80 millions of lbs.; of cotton and woolen manufactures, which together amount to the sum of 105 millions of dollars, Massachusetts alone produces more than 38½ millions, and New-England more than 68 millions; of tobacco, the crop being about 200 millions lbs., Kentucky and Virginia produce 111 millions; of 215 millions lbs. of rice, South Carolina produces about 160 millions; of the cotton crop, valued at 98½ millions of dollars, Georgia, Alabama, and Mississippi raised more than two-thirds, the entire crop being confined to six of the Southern and South-western states.

Eight different states produce the greatest amount of one or more crops, or products, viz: Massachusetts, New-York, Pennsylvania, Virginia, Georgia, Alabama, Tennessee, and Ohio, while four others must be added to the list, if we include the second highest, viz: New-Hampshire, Rhode Island, Kentucky, and Texas; and of each of these products, the total value is over $10,000,000. This precedence in the amount of production among the states, it will be perceived, belongs to the most widely separated portions of our country.

Says Mr. Tucker, in his valuable work, *Progress of the United States:* "Two-thirds of the mining labor is in the Middle and Southern States. The Southern States stand foremost in agricultural labor, though they hold but the third rank in population. The Middle States employ the least labor in agriculture, in proportion to their numbers. In commerce, however, they employ the most, and next to them the New-England States. The same two divisions take the lead in manufactures, they contributing nearly two-thirds the labor employed in this branch of industry. Three-fourths the seamen are furnished by New-England."

By the census of 1840, according to Mr. Tucker, the following was the geographical position of the several industrial interests:

	Mining.	Agricul.	Commerce.	Manuf.	Ocean Navig.	Inter. Navig.	Learned Profess.
N. E. States,	5.3	11.1	15.1	23.6	75.3	5.8	16.9
Middle States,	46.7	21.7	42.6	42.2	17.3	53.2	37.6
Southern "	21.1	24.8	11.	11.1	3.5	5.6	12.1
S. West. "	1.6	18.5	12.3	4.8	3.	12.5	9.8
N. West. "	25.3	23.9	19.	18.3	.9	22.9	23.6
	100.	100.	100.	100.	100..	100.	100.

The entire value of the annual agricultural and manufactured products, in he same geographical divisions, was as follows:

	Agriculture.	Manufactures.
New-England States,	$74,749,889	$82,784,185
Middle "	213,628,160	100,161,132
Southern " (ex. Florida,)	139,083,614	15,040,324
S. Western "	110,789,390	11,028,717
N. Western " (ex. Wis. & Iowa,)	112,964,907	30,821,866

The entire value of annual products, in these divisions, by the census of 0, was as follows:

New-England States, - - -	$187,657,294
Middle " - - -	390,558,303
Southern " - - -	175,321,836
S. Western " - - -	138,607,378
N. Western " - - -	170,987,925

By the census of 1850, the value of the agricultural products of the United States was as follows:

Indian Corn was estimated at - - -	$296,035,552
Wheat, - - - - - - -	100,485,944
Cotton, - - - - - - - -	98,603,720
Hay, - - - - - - - -	96,870,494
Butter, - - - - - - -	50,135,248
Potatoes, - - - - - - -	45,453,232
Oats, - - - - - - -	43,975,253
Wool, - - - - - - -	15,755,087
Tobacco, - - - - - - -	13,982,686
Sugar, (cane,) - - - - - -	12,378,850
Other vegetable products, with milk not included in butter and cheese, - - - -	106,774,794
Making a grand total of - -	$879,847,140

[NOTE.—In this table we do not include live stock, slaughtered animals orchard products, manures, etc., which are of immense amount, though very difficult to estimate. The TOTAL is estimated at over 1,326 millions of dollars.]

But a more extended view, while it confirms the statement we would illustrate, may also be of interest in various ways. Hence, we have prepared, at considerable labor, from the volume of the Census Returns recently published by Mr. De Bow, the following table, which specifies the relative position of each state, in respect to all the productions which are reported as exceeding $10,000,000. Those numbered 1, are the highest, and so on:

TABLE SHOWING THE RELATIVE PRODUCTION OF VARIOUS INDUSTRIAL PRODUCTS.

State and ratio to total population.		Indian Corn.	Wheat.	Cotton.	Hay.	Oats.	Butter.	Home-made Manuf.	Irish Potatoes.	Sweet Potatoes.	Wool.	Tobacco.	Cane Sugar.	Cotton Manuf.	Woolen Manuf.	Fisheries.
Connecticut,	1.60	27	25		9	21	16	22	9			8		5	3	2
Maine,	2.51	28	20		5	19	10	15	7		12			7	10	3
Massachusetts,	4.29	23	27		6	23	12	21	6					1	1	1
New-Hampshire,	1.37	29	23		8	24	15	16	5		14			2	6	9
Rhode Island,	.64	30	30		20	27	28		19					3	5	8
Vermont,	1.35	24	18		4	17	16	18	4		3				7	
New-York,	13.36	13	3		1	1	1	10	1	22	2			6	2	4
New-Jersey,	2.11	18	14		10	13	9	24	8	13				11		
Pennsylvania,	9.97	12	1		2	2	2	14	2	20	4	11		4	4	
Delaware,	.39	22	19		23	26	27		24	19				14		
Maryland,	2.51	15	8		15	18	21	25	18	15		3		9		
Virginia,	6.13	7	4	11	13	4	7	3	15	7	5	1		10	9	6
North Carolina,	3.75	10	12	9	16	10	20	4	20	3	16	6		12		5
South Carolina,	2.88	14	17	4	26	16	23	12	27	5				13		
Georgia,	3.91	8	16	2	24	11	19	6	25	1	15	13	4	8		
Florida,	.38	25	28	10	30	30	30		30	12		10	3			
Texas,	.92	20	26	8	28	28	24	19	29	9			2			11
Alabama,	3.23	9	21	1	22	14	18	5	23	2						
Mississippi,	2.61	11	24	3	27	22	17		22	4						
Louisiana,	2.33	16	29	6	25	29	29	23	28	8			1			
Arkansas,	.90	17	22	7	29	26	26	14	26	11						
Tennessee,	4.32	5	13	5	21	7	11	1	16	6	11	4		15		
Missouri,	2.94	6	10		17	9	13	8	17	14	10	5				
Kentucky,	4.24	2	11	12	18	6	8	2	13	10	7	2				
Ohio,	8.54	1	2		3	3	3	7	3	17	1	7		8		10
Indiana,	4.26	4	6	13	12	8	4	9	12	16	6	9				
Illinois,	3.67	3	5		7	5	5	11	10	18	8	12				
Michigan,	1.71	21	7		11	15	15	17	11	23	9					7
Wisconsin,	1.32	26	9		14	12	12		14							12
Iowa,	.83	19	15		19	20	20	20	21	21						

Such a table, however, does not show the exact relation of the different states in respect to the value of their productions. The first half dozen may produce more than all the rest, or there may be a large amount produced in nearly the whole number. Hence, we have prepared another table, in which the quantity of each of the products above described is appropriated to the several geographical sections of the United States, generally known as New-England, Middle States, Southern, South-Western, and North-Western States. As these divisions are not perhaps familiar to all, we name them in order: 1. Maine, New-Hampshire, Massachusetts, Rhode Island, Connecticut, Vermont; 2. New-York, New-Jersey, Delaware, Maryland; 3. Virginia, North Carolina, South Carolina, Georgia, Florida, *Texas; 4. Alabama, Mississippi, Louisiana, Arkansas, Tennessee; and, 5. Missouri, Kentucky, Ohio, Indiana, Illinois, Michigan, Wisconsin, Iowa. For convenience as a general reference, though not important in the use we make of it, we have placed over each division the population, the square miles of territory, and the pro portional population, the whole being 100. A few territories of little value in this connection, are not included in either of the tables here presented.

THE AMOUNT OF THE CHIEF PRODUCTS OF DIFFERENT SECTIONS.

[*The second division of this table gives the value of the productions there set forth.*]

	New-England	Middle States	Southern.	S. Western.	N. Western.	Total Value of Product.
	pop. 2,728,116 sq. m. 64,230 pro. pop. 11.76	pop. 6,624,988 sq. m. 113,021 pr. pop. 28.56	pop. 3,983,565 sq. m. 577,640 pr. pop. 17.97	pop. 3,108,325 sq. m. 235,415 pr. pop. 13.39	pop. 6,379,923 sq. m. 392,980 pr. pop. 27.51	
Indian Corn, bush.	10,175,856	60,413,948	117,572,608	122,637,135	280,864,368	$296,055,552
Wheat, bush.	1,090,894	35,084,340	15,540,285	2,251,475	44,973,459	140,485,944
Cotton, bales of 400 lbs.			957,687	1,467,334	772	98,603,720
Hay, tons,	3,463,252	6,198,111	569,989	149,008	3,448,047	96,870,494
Oats, bush.	8,101,268	54,323,536	20,639,024	12,917,690	50,499,460	43,976,253
Butter, lbs.	43,924,006	134,008,062	25,574,456	19,031,938	90,510,155	50,135,248
Irish Potatoes, bush.	19,618,111	25,620,109	2,403,597	1,864,791	16,125,556	26,319,168
Sweet Potatoes, bush.	80	843,749	21,322,624	15,211,317	1,889,118	19,134,074
Wool, lbs.	7,085,509	15,463,998	5,463,916	2 873 603	24,552,512	15,755,087
Tobacco, lbs.	1,405,920	22,411,447	69,767,642	20,609,696	84,963,997	13,982,686
Cane Sugar, hhds. of 1000 lbs.			11,024	226,012	10	12,378,850
Home-made Manufactures,	$1,598,824	$2,294,270	$7,334,619	$7,013,379	$9,238,863	
Cotton Manufactures,	42,040,178	12,782,718	5,251,028	940,021	855,239	
Woolen Manufactures,	26,077,812	14,065,456	968,513	6,310	2,089,454	
Fisheries,	9,034,919	484,345	358,703		117,216	
Commerce, 1840,	13,528,740	40,680,0 1	11,967,281	14,255,964	17,929,020	
Pig, Cast, and Wrought Iron,	10,992,704	36,115,836	2,910,440	2,342,069	8,103,864	

*Texas is classed among the South-Western States in the census. We inadvertently placed it among the Southern.

The examination thus made shows us, also, that there is no one crop or product which, in amount, so greatly exceeds others as to be of right regarded as the especial source of national wealth. If there are such products, to any extent worthy of such distinction, it belongs to the class of grains, which are not only so necessary to every community, but which are also very imposing in their amount—the value of this crop being more than 600 millions of dollars annually. And among all these varieties, Indian corn is nearly one-half the gross amount in value; and, at the same time, as if to prevent all sectional jealousy, there is no crop which is so extensively cultivated among the different states as this. Sixteen states raise, each of them, over ten millions of bushels annually; and there are but three states in all that do not raise more than a million bushels.

We do not regard our cotton crop as an exception to the statements we have made. It is of immense value, in its direct and indirect results, as we shall see clearly in the sequel. But in the value of the crop itself, taking the census as authority, it is exceeded both by Indian corn and wheat, and is nearly equalled by the hay crop. True, it moves a multitude of spindles; and the clatter of its looms, if heard in one grand, industrial chorus, would shut out from our hearing the very thunder, and the roar of our Niagara would be silenced in its presence. It builds ships, employs many sailors, clothes millions of people, rears cities, and is potent in directing the movements of commerce in this and other countries. Whoever speaks lightly of the importance of this crop, in its financial relations, is a madman or a fool. But we shall still insist, and the sequel will illustrate the position, that a wise Providence has built up this vast republic, so distant in its geographical extremes, and so various in its possible developments, yet so related and so combined and interwoven in its wants, its products, and its interests, and so mutually dependent and mutually sustaining, that it would seem to require more than the wild frenzy of a madman, or the reckless abandonment of a fanatic, to break it in pieces. We should deem no force competent to overcome all these natural bands, cemented as they are by treasure and by blood—blood shed in the common defence, and the blood of families intermingled, and now beating in living hearts; and, we verily believe, that no arm but that of an avenging God will ever bring this fair heritage to desolation. That bale of cotton, picked by single hands, ginned and conveyed by railroad and steamer, dropping coins of gold all along its way, is spun and woven into fabrics that are found in every village shop in Christendom. No less really do those threads run through the very woof and web of our social organism. Perhaps the wool of some Western or some New-England flock is taken for the filling of which this cotton forms the warp. If it be so, these two products of distant states are not more intimately connected, in all future time, than the distant states, so dissimilar in almost every physical feature, from which these materials are brought.

It is not, however, the value of a crop or product which determines its financial importance in a national view, nor yet in the leger of the producer. It may have cost all it will bring, though its market price is estimated by tens of millions. The amount of its "transactions" in the price current may be comparatively small, and yet it may be highly remunerative. Some fertile lands are so cultivated as to be even a source of expense. Some soils of moderate value in the market are made to pay very handsome dividends.

There are sections of country where wheat "will not pay." Sheep and wool are of doubtful value as an income in large sections of country. In such cases, these crops, though they may swell the column of "aggregates,"

are of no great pecuniary benefit to anybody. We have recently seen the statement, by one evidently familiar with the subject, though he may be in error in his calculations, that the entire cotton crop costs the planter eight cents a pound. If so, the planter is enriching factors and manufacturers at his own private expense, and he is bound, in justice to himself, to keep his accounts with great care.

But other considerations of great importance belong to this view of our subject. Some crops pass directly from the producer to the consumer, though perhaps burdened with sundry commissions and charges. They are conveyed, and only conveyed, and then consumed.

We have been trying to persuade those who supply our markets, that the neglect of attending to these matters is the cause, and, we think, in many cases, the sole cause of their poverty. One can not afford to produce scarcely any thing at half the "market price." If he does, he must ever be a producer, and never rest from his labor, nor ever be able to save any portion of the avails of his labor for the supply of his future wants.

Some products pass into second hands, where, by the exercise of skill and labor, their value is greatly enhanced. Perhaps the second profits are greater than the first. A moderate illustration of this occurs in wheat. The flour-mills of this country employ some 38,000 men, either as millers or as millwrights. A much greater secondary profit arises from the manufacture of wool. The annual wool crop of this country, as we have seen, amounts to about $16,000,000. Wool is also imported to the amount of about $2,000,000. But the woolen manufactures of this country amount to more than $43,000,000. Nearly forty thousand hands are employed, permanently, while the capital invested in this manufacture exceeds $28,000,000.

But a far more notable illustration is seen in the cotton crop. The value of this crop is less than a hundred millions, and of this about ninety millions value is exported, while very little raw material is brought into the country. Yet the value of our cotton manufactures is about $62,000,000. This gives employment to nearly a hundred thousand men and women, while over $75,000,000 capital is invested in it. The manufacture of wool, again, consumes some 46,000 tons of coal, and that of cotton some 120,000, the production of which furnishes support to other thousands. So, too, the iron trade —the value of which is about $60,000,000 annually—consumes one-and-a-quarter millions of tons of coal, and more than seventy millions bushels of charcoal—another valuable source of remunerative industry.

A large part of the cotton crop, as we have just stated, is sent abroad. This service furnishes employment, in addition to a large force employed in inland navigation, to 800,000 tons of shipping, and to 40,000 seamen. In previous numbers, we have discussed, in various forms, the public and private bearings of such labor and charges. Items of cost, adding nothing to the value of the raw material, are not, in general, regarded with much favor by producers, and yet they are, of course, sometimes absolutely necessary. They are, however, entered on the profit and loss account, and, by their exact amount, diminish the balance of the credit side, if they do not sometimes destroy it. But cotton is not alone here. It is but lately that we have read that the short crop of wheat has most essentially diminished the business of our canals, and left thousands of boatmen without employment.

It may be the payment of such charges, however, that swells the value of these crops to such enormous sums. We remember the time, and so can some much younger than we, when corn was worth scarcely ten cents a bushel in Ohio. It may be so now in some dark corner. But this was the result of

enormous expenses for freight, etc., before railroads were so frequent. Now, when the market is open, when there is rapid communication between sellers and purchasers, taxes of this sort are paid, and still the *nett* price of the crop is more than quadrupled.

If we should, therefore, conclude, as a matter of course, that all these charges were really a loss, a burden, our logic would be in fault. It would be just as rational to say that the cost of the harvest is a loss.

When these commissions, charges of freight, brokerage, etc., are the necessary means of producing high prices, they ought to be paid cheerfully, as in the case of the Ohio farmer. But if they are not necessary; if arrangements can be made for commanding present prices, and yet for dispensing with some of the immense outlays demanded by the present usages of trade, then these charges are not only a tax, but a useless tax, to their full amount. Hence, it is proper, in all such cases, to enquire who pays these charges, the producer or the purchaser. Let us use a familiar illustration. A merchant sells goods to A. for $50, agreeing to deliver them. He sends them by packet or by steam. The owner of the packet is a gainer by this transaction, but the charge comes out of the $50, and it appears on the profit and loss account. But suppose he sells for $45 in the warehouse? No such entry is then made in the profit and loss account, and yet the balance is just what it was before. The goods, in fact, are still charged with the freight, and he neither gains nor loses by the change. But suppose he finds a new customer, B., and sells, when delivered, for $75, the freight being $10. He makes a profit of $20 by this change. The ten dollars are not a loss, but a source of profit. And, yet, if you talk about that merchandise as estimated at $75, or $75,000,000, it is obvious that ere the real value of it is ascertained, all these charges must be deducted. If our corn crop was not wanted at home, but must needs be exported for a market; if it should cost all our shipping to do this service, and employ all our seamen, it would do much towards making this immense crop of no real value to the producer, and to the country it would be valuable just in proportion to the number of men it would support, and the capital it would profitably employ.

Were a HOME MARKET erected for our cotton; were those forests of British spindles to be transported to Georgia and South Carolina, we might retain in our own neighborhood all the benefits of this trade, which now do so much to build up and perpetuate the enormous power of our island rival. Th profits of the foreign capitalist, the foreign manufacturer, the foreign artisan, the foreign spinner, and weaver, and colorer, would all be secured by our own citizens, and, perhaps, within sight of the growing crop. True, the manufactured goods must then be exported, and thus the shipping interest would still be needed as now; but the grower of food and clothing would find his market wonderfully increased, and builders of houses, and owners of house-lots, and brick-makers, and lumber-men, masons, paper-hangers, tailors, shoemakers, etc., etc.—a great multitude, would throng those shores, an untold capital would find a profitable investment, and barren wastes would echo, without interruption, the hum of prosperous and happy families; manufactures of all kinds would be greatly increased; the South and South-west would be dotted all over with cities, ever growing, and, day and night, the hum of profitable industry would not cease; and, by-and-by, the splendid mansions of those made rich by this change, and who retired from the strife after wealth, satisfied with its results, would adorn suburbs of those cities and our rural districts and society would be enriched by the refinements and elegancies which wealth and industry only can procure.

STATE PATRONAGE OF AGRICULTURE.

The following action of the Maine Legislature is commendable. It exerts a double influence, modifying the character and arrangement of the courses of lectures on chemistry and vegetable physiology, thereby securing more attention to these departments, for the benefit of all the students, while the liberal endowment, conditionally offered, provides for the instruction of an entire class of young men, (and old ones, too, if they will,) thus far without valuable facilities of improvement in these hitherto neglected sciences.

The third section, however, is entirely too general. The obligation to analyze all soils, manures, plants, and seeds, sent by any farmer of the State, might require the constant employment of a dozen experienced chemists. Had it been confined to the "Board of Agriculture," who may be supposed to be reasonable men, no special danger of that sort might be apprehended.

An Act to endow the Chemical Professorships of Bowdoin and Waterville Colleges, on certain conditions.

Be it enacted by the Senate and House of Representatives in Legislature assembled, as follows:

Section 1. The State Treasurer is hereby authorised and directed to transfer the sum of thirty thousand dollars, in six per cent. State Stock, to the Board of Trustees of Bowdoin College, and the like sum of thirty thousand dollars, in six per cent. State Stock, to the Board of trustees of Waterville College, to be held in trust by them respectively, as endowments of the Chemical Professorships in these Colleges, of which they are Trustees, whenever said Board of Trustees shall severally certify to the State Treasurer, through their Secretaries, under oath, that they have enlarged the duties and means of instruction under said professorships, so as to embrace Agricultural Chemistry and Vegetable Physiology; and that they will comply with the requisitions hereinafter specified.

Sec. 2. It shall be the duty of said Board of Trustees, to cause instruction to be given without fee, to all persons, inhabitants of this State, not undergraduates in a regular college course of instruction, who may resort to said institutions as students under the Professorships of Chemistry only; they having the same privileges of the several libraries and on the same terms, and being subject to the same college laws, rules, and regulations as other students, so far as they may be applicable to their position in said institutions; and such students may attend, without charge, all the lectures in said colleges, under such restrictions as may be imposed by said Boards of Trustees, and sanctioned by the Board of Agriculture.

Sec. 3. It shall be the duty of the Professors of Chemistry in each of these colleges, to analyze or cause to be analyzed, as speedily as may be, all soils, manures, plants, and seeds, sent to said colleges for this purpose, by the farmers of this State or the Board of Agriculture, without charge to the applicant, and report the result to him, with such suggestions as he may deem necessary in the premises; and annually, on or before the first Wednesday in January, report to the Secretary of the Board of Agriculture a full statement of his doings, with such other matter as he may deem suitable.

Sec. 4. A committee of three from the Board of Agriculture, elected at its annual meeting, shall constitute an examining committee, to visit, from time to time, the Chemical departments of said Colleges, to witness their

instructions and doings, with special reference to the interests of Agricultural Science; and annually, on or before the first Wednesday in January, report to the Secretary of the Board of Agriculture a statement, so far as they are able, of the doing, conditions, and prospects of these departments.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

FAIRS—THEIR BENEFITS, ETC.

MESSRS. EDITORS:—In the January number of your journal, an article of mine was published on "Fair Benefits," to which a lengthy editorial is appended, giving a wide expansion to the subject. And first, the editor goes on to say that fairs are not designed for the especial benefit of those who receive premiums, but for the masses, or the people at large. Of course this policy is correct; and it was my object to sustain the same doctrine and principles in my article. The premiums, of course, are one of the leading causes, and a part and parcel of the whole system by which fairs are sustained. And, although the competition for premiums is open to all, but a small number of exhibitors can obtain what are called "first prizes," yet a larger number will obtain many of the grade premiums. The writer then goes on to suppose a case where all articles were to be shut up from the sight of the visitors, except those which had received a premium. How many tickets could then be sold, etc.? Probably seven-eighths of all the exhibitors at our fairs, offer their articles for premiums, while one-eighth may offer them simply for exhibition and sale. In many instances, the premiums are of no particular consequence except to bring the articles before the public. In many cases, exhibitors of machines, etc., have no eye on the premiums at all, but wish to bring them before the public for examination, and a future market. We do not see the force of the editor's argument, when he says, in substance, that if all the articles on which premiums have been awarded were removed or destroyed, our fairs would suffer but little, as the loss would be hardly noticed by the public, since about as good a show would be left without the premium articles, as with, etc. Then he asks again, "For whose benefit are fairs instituted? Are they for those who exhibit especially, etc.?" But, as we have said before, the premiums are a part and parcel of the whole system, and so combined, that you can not well have one without the other attached. It may be true, a good or tolerable exhibition of articles may be had outside of the premium articles. But what brings such articles to the exhibition? It may be safe to say that seven-eighths of such articles were entered for premium, in the first place, but failed to obtain such notice at the hands of the committeee, although, in many cases, they were equal to any on the ground. So, then, to say that as good an exhibition can be had without the premium articles as with, is, we claim, saying that which is not strictly true. Because, if you break up the system and order of the exhibition, then, unless fairs can be sustained on some principle entirely free from selfishness, where every body will do all things and furnish all things for the exhibition, free gratis, can we expect to see free fairs sustained by the people? Our experience has shown us that farmers should not be so anxious to show their corn or animals for the sake of saying that no better were to be seen in the country than theirs. But that such animals and such corn were the best they had, and they brought them to the exhibition for the sake of making a good show,

and drawing a premium, if they could, by fair means; and this idea is a just one. We never went on the principle that if no crops or animals were better than those that had already obtained the first premium, no premiums should thereafter be offered, unless some things superior to those could be produced; for we have not as yet reached that point of excellence in productions or management. The idea is, for judges to give premiums for the best articles shown on the ground, although there may be articles of double the value in the county or state of the same kind. Yet they are not on the ground, and so the judges must do the best they can with the articles before them. But the writer says, in substance, that the ultimate aim of all shows is to affect the masses of the people through the senses. So say we; but how to come at that point in the most practical way is the question. Though the writer seems to think that if reading an account of the show at home was all that was necessary, then a few "itinerant committees," appointed and paid for by the State, would be the best thing to meet this demand. For our own part, we have but little faith in these "State Agents" to accomplish much good in that way. In most cases, they would have a stronger look for the "dollars" than for agricultural improvement. But the writer then goes on to ask, whether it is best to tax the people with such an assessment as will hinder them from seeing the show, and thinks such a plan is unwise—whether the tickets should be a sixpence, a shilling, or a quarter—he does not stop to ask, etc. Now, our idea is, as we said in our former article, that the people should bear their share of this tax, because, in principle, it is a one per cent. tax to a ninety-nine per cent. profit; and who is better able to pay this tax and receive this profit than the people are themselves.

It is very well known that the masses of people at large do not value a small tax of the above description when they become interested in the exhibition; and in reality thay feel disposed to learn something from it. Of course, it is understood that the farmers, who feel more interested in the support of these exhibitions than do the people in general, will do more towards their support. And, in fact, the greater part, or the whole of the management must be sustained by the farmers at large; still the people should be willing to do their share. The writer goes on to ask at whose expense the temperance reform is sustained, and claims that those who totally abstain are the ones to be depended on to sustain this reform, although they may not need it themselves. Then, again, he asks who sustains all the "isms" of the day—why it is those who feel interested in their support, &c. And, of course, as he says the agricultural reform belongs to this class, the farmers must be depended on to support it. Now, we beg leave to say that neither the agricultural reform nor the temperance reform are "isms," any more than they are "humbugs," as we understand it in the sense that word is made use of. But, on the other hand, both of these reforms are living, acting principles in themselves, in which the whole people should be actively interested. And why so? Because every man, woman, and child in the country is benefited by such reforms and improvements. Then, on this principle, we say it is not those who feel the importance of the reform who should be depended on to sustain it; because it is the whole people at large who get the benefit of these reforms. If this be the case, on what principle is it that a few individuals should have the burden and sustain these reforms, while the masses receive the benefits of them? But the writer goes on to say that he has been quite celebrated in his day for his advocacy of Protection to American Industry, &c. We are glad to learn that, for there is need enough of it in these days. We have known men who were great

advocates of this same doctrine, who, when they wanted a new coat, would pass by the American cloth, and nothing short of the best French would answer their purpose. We presume, however, that this writer does not belong to this class of "Protectionists," but goes in for practice as well as preaching. His plan of an Industrial Protection is a new one, and it may be all well enough; and we should be glad to have such a system of industry brought about, if it could be done; but it is much easier to lay out a plan on paper than it is to carry it out and make it work in practice. The doctrine may be all well enough, but the next thing is to carry it out and make it work in practice. When this writer can succeed in drawing out any of the State or Government funds, to be used after his plan, we should be glad to be informed of it. We have learned, after a few years of trial, that government aid was the most "lame stick" to lean upon that you could possibly name; and so we have come to place no dependence whatever on their talk. But we have much more confidence in individual effort, carried out and acted upon in concert with the people at large, for improvements of this character. And when you can succeed in getting the people waked up to the importance of protecting industry as a principle, these plans can be brought about by the people at large. If you can get government aid in any wise it will be all well enough, but we, for one, can not place any confidence in their help. Yours, truly,

L. DURAND.

Derby, Ct., March, 1855.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

ARE ROBUST HEALTH AND GOOD BUSINESS HABITS INCOMPATIBLE WITH THE GREATEST REFINEMENT?

THIS may seem to be a singular question to propound; but if we are to judge from what we see and hear, there are different opinions on the subject, and I would be glad to see some more able pen than mine brought to its discussion.

I feel deeply on this subject, and well I may, for some of my best friends fill early graves because, as it seems to me, the customs of society demand in females too great a delicacy; and it is to females more particularly that I would apply the subject. By all means, treat our sisters and female friends tenderly and kindly. But is it kindness to deprive them of all opportunity to qualify themselves physically to endure the hardships of life? Shall we be so tender of our wives and daughters, as to deprive them of the luxury of a ramble in the bright green fields, with glowing cheek and bounding pulse? I would that every woman in the land were as perfect in form as Powers' Greek Slave; but if the customs and practices of the present day continue, we shall be compelled to look among slaves and menials for models. I write this for the farmers of the land, and those who may become their companions; for if others can enjoy the society and companionship of the feeble and deformed, we can not. Our duties and pleasures have too much of real life in them to admit of that, to say nothing of the effect upon our posterity, which is a matter of vast importance, too great to be entered upon in this communication. It may be said that to be intellectual, we must be exempt from labor, and, therefore, delicately constituted. This does not agree with my observation, where labor and study have been harmoniously

combined, and good habits have done their part to strengthen and invigorate the constitution. How great a proportion of those whose minds are cultivated at the expense of physical culture are lost to the world, because they have not constitution to enable them to use the knowledge they possess, but they linger awhile in feebleness and pain, a burthen to themselves, a sorrow to their friends, and then drop into a premature grave. The remedy is, to a great extent, in our own hands. Let a correct standard of physical beauty be established in accordance with the laws of Nature, and the same pains be taken with the human form divine that is taken with the precious jewel it contains, and they will help to adorn and improve each other. W.

WHY ARE NOT SOUTHERN CROPS MORE PRODUCTIVE?

"THE records show that he (the producer of cotton, tobacco, etc.,) was really paid for his exports in foreign goods, and that duties have been paid upon these to an amount over a billion of dollars; and this enormous sum the producer must have paid when he had to surrender a part of the value of his imports to government as he entered them. There is but one way in which he could have escaped, and that is by selling the part left for as much as the whole was worth before, and, by thus raising the price, throw the whole tax upon the consumer. But, in this case, the South must have paid a still greater share of the duties than before; for not only is she a much larger consumer of foreign merchandise than the North, but if the price of the imported article is raised, so must be the price of the similar article of domestic manufacture; and the South would pay three or four times as much in this shape to the northern manufacturer, as she would to government in the form of duties. It is true that the increased price of domestic goods would also be paid by the northern consumer; but with this important difference, that what was paid would be spent among themselves, and so in a manner returned to their pockets, as the factories are scattered through their country, while to the South it would be a dead loss." —*De Bow's Review, April*, 1855, *p.* 433.

Some theorists are so wedded to their own notions, and so fixed in their "principles," that they can not see what even their interest would prompt them to regard with favor. They see that evils exist, which are felt sometimes to be severe, but they will not admit that this state of things is the result of those conditions in which they almost alone differ from others, among whom these evils are not found. Nor will they heed the counsel of those who would urge them to modify those conditions, and make a practical test of the correctness of those theories. Now and then, however, the truth incidentally creeps out, and it would seem that, after all, there was an appreciation not only of the truth, but of the importance of such counsel. Among many examples of this sort, we would refer to the closing sentence of the foregoing extract: "But with this important difference, that what was paid would be spent among themselves, and so in a manner returned to their pockets, as their factories are scattered through their country." This admission is incidentally made in this passage; and though the learned and accomplished editor of that review might even add his powerful influence in favor of what we regard as the only wise course to pursue, yet our Southern friends generally do practically deny it, and limit themselves to the production of a few staples, which are now sold only as raw material in a foreign market, and thus they voluntarily assume the very "burdens" of which they so grievously complain, and cast upon others the reproach of inflicting upon them evils, of which they, in fact, have essentially the control.

This admission contains a great truth, a controlling truth, on which depends, in our judgment, to a very great extent, the whole question of profit and loss. Hence, if we are correct, it is a truth that no individual and no commnnity can neglect with impunity.

The question of loss and gain, in any business, depends on a proper regard for certain matters which are treated by the many as of little importance. We well remember the advice of an experienced friend when we were about engaging in a certain enterprise. "Now, remember," said he, "your profits will not be made from what you earn, but from what you SAVE." These words should be written in letters of gold in every counting-house and in every shop. Generally, if you caution a young man about his liberal indulgence and large expenses, he will tell you—"Oh, I earn enough; I have a good income." It is of little consequence what a man or a community earns, unless he or they will contrive to KEEP a portion of it. That is the difficult point in all financial operations. Many a young man gets rich on his hundreds, while many hundreds become bankrupt on their thousands. And, very often, the issue depends not so much on setting aside a portion of the receipts, with the intention of saving it, as of avoiding certain expenses, or preventing small wastes and losses.

Now, whether supposed facts and reasonings can be brought forward to the contrary, we add our testimony in confirmation of the doctrine incidentally presented in this quotation. The Northern States flourish with their indefinite variety of trades and occupations, simply by the practice of the truth here hinted at. Illustrations of it are not witnessed in "factories" alone. Hundreds of miles of railroads have been built, without the least expectation of profit in the shape of dividends, but exclusively for secondary and incidental benefits. Their money, as already invested, earns them at least lawful interest; but these wise and prudent men, men of forethought and foresight too, prefer to bury it in the railroad, with the expectation of little or no direct returns. What is their motive? Perhaps unproductive farms are thereby converted into house-lots. Perhaps a wide territory is thereby opened for trade. And factories are built. Why? Because such stocks always pay well? Far from it. They will sometimes pay largely. Sometimes they sink immense sums. But they make a new market at any rate. The factory village furnishes a market for almost anything a farmer can raise, a mechanic construct, or a merchant import. What else is needful, then, for either of these producers, but sufficient numbers of just such customers.

We do not intend to be understood that these secondary considerations generally or often control the action of *city capitalists*, when they subscribe for factory stocks. But such considerations have very often induced the less wealthy farmer and mechanic to invest their smaller savings in such establishments, and they have grown rich by such indirect means.

We have before alluded to the pine barrens, we so well remember, on and near which the thriving city of Manchester now stands; and to the $10,000 now received, annually, for MILK by the farmers of the adjoining little town of Goffstown, the land of which, in our boyhood, was as worthless as any other land in that whole region. Those farmers, could they have found the means, might almost have built those mills for nothing, without loss.

And why do not our Southern friends see all this in reference to their own territory? Is there any reason why the same results would not follow among them as at the North? But the writer of the foregoing extract would make very prominent the fact, which is, no doubt, true, in some sense, that the Southern States are burdened with severe "duties." "A billion of dollars"

has been paid. Well, all this is optional with them. Individuals may not be able to rid themselves of this "burden," if it be one, but combinations of men may. Is it asked, How? The "one way," the writer describes, in our judgment, is wholly impracticable. The way we have often pointed out is a matter of PRACTICAL DEMONSTRATION. The writer of this paragraph substantially admits it in his closing sentence. If this is not so, the "difference," he describes, would not be "important" in the view which he has taken.

These "duties," and, of course, all the incidental charges, for they are alike "a burden," which are attendant upon exportation, whether of one sort or another, are represented in this passage as "burdens" upon the producer. True, he says, "in our belief, the duties are paid partly by the producer, and partly by the consumer." But he still reasons as if all were paid by the producer. "Southern burdens and Northern profits." Writers on the great subject of "Political Economy" are, perhaps, tempted sometimes to mystify the facts, and misapply acknowledged principles, and, therefore, fail to convince each other. But we would trust any one of the thousand "given cases," belonging to this chapter of Political Economy, to the decision of a jury of ordinary intelligence, if the facts could be clearly presented, and its party bearing kept out of view. Perhaps exceptions may occur to the general rule, in this department of science, as in every other. But take a case by way of example.

The people of Ohio, at one time, were obliged to sell their corn at ten cents a bushel. But, by-and-by, communications were opened. Railroads were constructed. Those fertile lands were brought into close proximity with a ready market, and now that corn commands a dollar. But the railroad requires a "duty" of twenty cents, or TWO HUNDRED PER CENT, on the original value of the crop. How enormous! How excessively tyrannical! Such oppression who can endure! And yet this very oppressive system has converted their ten cents into eighty cents net; or, in other words, has increased the net value of the entire crop eight-fold. This tax is no "burden" upon any body. No one suffers to the amount of a farthing for it. The producer is profited; the consumer pays the duty and the eight hundred per cent., and still is profited. The carrier is well paid for his service, and none even finds fault. "Oh, yes! We require the railroad to carry our corn 'free.'" The folly of the pretended claim is too apparent almost to allow it room on the page. And yet this is clearly a tax, an assessment, a "duty;" and when used in connection with our canals, etc., these payments are sometimes officially described as "duties." Duties, then, are not always "burdens," nor "imposed," in any unfavorable or undesirable sense, by any one. They may be of great benefit, and, in some aspects of the question, may be very important, in this connection, to the cotton growers of the South. Whether they are oppressive or not is the question to be settled. But, after all, we think there is a way, and "a more excellent way," of getting rid of this "burden," if it be such, than by changing the revenue laws in the manner our Southern friends, many of them, would propose.

We have already shown that, if a given investment can be made to pay good dividends, that investment should be pronounced successful, whether it be by direct or indirect processes; and we have referred to the manner in which "the North" sustains herself under the same revenue laws, and the closing sentence of our quotation brings it out beyond the possibility of misapprehension. And how do "the North" sustain themselves, and become rich, under that same revenue system? It is by encouraging a diversity of employments. So says this able writer. So say we. It is true, and just

about the whole truth. It is their "factory" system—their facilities for trades of all kinds. "There is no friendship in trade," says the proverb; but it is false. No bigger lie was ever uttered by fraudulent huckster. It is true that there is no friendship in *many traders*. But when this is asserted as a fundamental principle of trade, it is false from A to Zed. Wholesome, prosperous trade demands, imperatively DEMANDS, a regard for the precept, "LIVE AND LET LIVE." This is the basis of all honorable traffic. Man is not an isolated being. His interests are interwoven with the interests of his associates, his "neighbors." He must recognize his fellows. He must have a prosperous community to deal with, if he would prosper, permanently, himself. What can a merchant do with bankrupt customers? What can farmers and mechanics do, if bound to deal with the moneyless and the starving? Under the name of trade, one may, for a while, plunder and rob, as too many have done with our Indians, and in the East India trade. But this is not worthy the name of trade. No. "Live and let live" is not a gospel precept alone. It is cut into the very walls of our social structure. It must be so, because the structure *is* social. This great truth is taught and proclaimed aloud in every thriving city and village. The commentary on its negation has been heard, not from any choice or intent, but yet not without emphasis, in our own midst, in the months past, and its voices are not all silent yet. This truth is proclaimed in every crowded mart, and its still, small voice is heard in the hospitalities and friendly greeting so characteristic of rural districts both north and south.

Call in, then, the various crafts. Give them room even among your cotton fields. "But who will employ them?" Why, you will employ them, and they will employ each other, through the whole chapter. Does not the blacksmith need shoes, and the shoemaker clothes?

But one department of this effort is pre-eminently important. Just transport those forests of SPINDLES now bristling through that island yonder; or, more properly, let machinists be assembled, from all quarters, on your own borders, and let them there erect their shops, and forge out those magic forms, more potent than any divining rods, and let other mechanics erect your factories, and then fill them with machinery. Let your ingenious artisans invent improvements, and let other thousands take your own bales, and transform them into various fabrics. Let this be done till you find a use for a large part of your crop, and then what do you think would be the price of raw cotton in Liverpool?

The price would then be regulated on this side the water. The large accumulations of any product at a market, determine the price of that product the world over. England now has all this crop to herself, and controls its price, for the simple reason that no body else can buy it. Create a capacity to buy, or consume, in this country, and just so far you regulate and control its market value.

The manufactured article must still be exported. Few ships and few seamen would lose their employment. But, meanwhile, you have immensely increased your profits, in various ways, so that you can really afford to sell the manufactured goods at less price even than they now are sold for. Why? Because real estate owners would realize double, and treble, and even ten-fold their present receipts for their lands. Large demands would be created at once for house-lots, for corporation purposes, and for all kinds of mechanics. Another large portion would be required for the use of those who would feed the additional population, and for the support of their own families, and so the story would go on, after the fashion of "The house that Jack built."

There might even be some "dogs that *worry* the cat," and other unpleasant incidents, but these would be comparatively but trifles.

We happen to have on our table an account of just such an operation in the State of Connecticut. In 1684, the territory of *Mattatuck* was sold "for divers good causes and 39 pounds." It was supposed capable of sustaining THIRTY FAMILIES. On this tract, the thriving village of Waterbury now stands. We passed the night there some three years ago, in a hotel which cost, when unfurnished, $40,000, and a still more costly hotel was then nearly completed. The following is "The Grand List" of that town for 1854:

DESCRIPTION OF PROPERTY.	
Dwelling Houses,	$1,150,265.00
14,922 Acres of Land,	396,353.00
Stores,	65,300.00
Mills and Manufactories,	33,450.00
Horses and Mules,	28,185 00
Neat Cattle,	28,772.00
Sheep, Swine, and Poultry,	349.00
Coaches, Carriages, and Pleasure Wagons,	10,959.00
Farming Utensils and Mechanics' Tools,	25.00
Clocks, Watches, and Jewelry,	10,977.00
Piano Fortes, &c.,	6,130.00
Furniture and Libraries,	10,850.00
Bank and Insurance Stock,	169,717.00
Bridge, Turnpike, and Plank-Road Stock,	600.00
Manufacturing Stock,	2,584,787.00
State and other Stocks,	5,600.00
Railroad and other Bonds,	7,690.00
Amount employed in Trade and Merchandising,	182,997.00
Amount employed in Mechanical and Manufacturing operations,	63,375.00
Investment in Vessels and Commerce,	300.00
Money at Interest,	268,005.00
Money on hand,	1,330.00
All other Taxable Property,	2,200.00
Additions by Board of Relief,	4,803.00
Amount,	$5,033,109.00
Deduct indebtedness, &c.,	100,938.00
	$4,932,171.00
Increase over previous year, $660,377.	
Amount of Assessment, at 3 per cent.,	147,965.13
1893 Polls, at ten dollars each,	18,930.00
935 Military Subjects, at fifty cents each,	467.50
Taxable amount for 1854,	$167,362.63

Certified by

ISRAEL HOLMES, 2d, Town Clerk.

One would think this profit enough for one generation, and nearly all this is the work of those now living. There are in this town five fulling-mills, three woolen factories, three cotton factories, two tanneries, two rolling-mills, a machine shop, two iron foundries, ten button factories, a pin factory, hook

and eye factory, india-rubber goods factory, five grist-mills, sixteen saw-mills, and last, though not least, TWENTY-THREE SCHOOLS.

Now, if the Southern States would, in the words of our extract, have all their outlays "in a manner returned to their pockets," and be rid of the "burdens" of which they complain, let them do as those do whom they intended by those words to describe.

It is all very well to sit in the lap of wealth, and the free enjoyment of literary and social privileges, and of personal refinement, and to treat the "evils" incident to progress such as we have described as nuisances that can not and will not be endured. But such a course is not in good taste, at least, when one is mourning over financial burdens, and deterioration of property, and heavy expenses, and the like. These incidentals, as they might be termed, are found in groups. Mechanical industry occasions one set, inactivity and luxurious ease another set. They never get mixed up, except in some great financial crisis, which overturns and disappoints every body. We do not blame nor reproach the South even for boasting over their freedom from numerous evils that exist at the North. We should delight in the same quiet and refinement which characterises much of Southern life. We fully appreciate the high breeding, the refinements, and last, not least, the hospitalities of those States. But we can find all this, too, at the North. And as long as purses are finite things, and often seem *very* shallow, especially when used too familiarly, we learn to look upon all forms of labor, and even dust, and noise, and coarse manners, (if the intention is kind,) and the thousand elements that go to make up industrial life, in its various aspects and attendants, as of little consequence compared with the immense good which results, in various ways, from every form of industry, and among all the people.

CLIMATE.

AN erroneous idea generally prevails respecting climate, as affecting personal comfort. The dwellers in the sunny South pity the New-Englanders, because doomed to shiver in so cold a climate. They, in turn, bless their stars that they are not wading in the snows of Newfoundland.

I have been led, by observation and experience, to doubt whether the people of any one country have much, if any advantage, in the matter of climate, over others.

Our ideas of pleasure and pain are intimately connected with, if not based upon the principle of contrast. In our idea of temperature, we have less regard to the actual than to the comparative degree of warmth.

In the report of one of the exploring expeditions in the northern seas, it is said that, on a certain occasion, the crew were greatly elated with signs of a thaw, the mercury having risen to 40° below zero. Having been subject to a much intenser degree of cold, they felt, as did the boy, whose father had administered to him a severe flagellation, "greatly refreshed."

It may well be doubted whether the people of Maine suffer more from cold than do they of Virginia.

Touching the weather, it is much as it is with the tariff—all that the people want is to have the line of governmental policy settled—to know what can be depended upon. So of the weather. The down-easter, knowing that

from the middle of November to the middle of April the ground is to be covered with snow, and uninterrupted cold weather is to prevail, he wraps his fur coat about him, inflates his lungs, braces up his nerves, and thinks no more of the cold than the "rugged Russian bear."

The dweller in the Old Dominion, on the other hand, regarding warm weather as the rule, and cold as the exception, makes no provision for the latter. But when the northern blasts come, as come they will, he wraps his fig-leaf coat about him, and seeks shelter within the enclosure of his airy mansion, so constructed as to exclude heat rather than cold.

Then there is another consideration which greatly favors the dwellers in cold latitudes. While the earth is covered with snow, there is but little evaporation. The atmosphere is consequently dry, and storms are unfrequent. Where there is no snow, it is far otherwise. The whole surface being covered with water, evaporation is rapid, and the atmosphere is surcharged with vapor, and the peculiar chillings which characterize a March wind in New-England, prevail during the winter months.

Agriculturally, the snowy region has many advantages. It is better for the *soil* to be covered during the winter months. That there is any *virtue* in the remark, "snow is the poor man's manure," I don't believe' But certain it is, that grasses and grains are benefited by being thus protected.

Snow is an imperfect conductor of caloric, consequently the surface being protected from the cold of mid-winter, the heat from within dissolves the frost, and when the snow disappears in spring, the frost is gone from the soil. It is not uncommon to find the grass growing before the snow is off. Fields are ready for plowing soon after they are bare; so that stock will live, and seed may be gotten into the ground nearly as soon in Vermont as in Connecticut. Then, for doing business, the snowy regions have greatly the advantage. Lumbering is with great difficulty carried on where there is no snow. The lumber lands in Maryland and Virginia would be worth twice as much as they now are with northern winters for the removal of the lumber.

But I will say no more lest 1 get up an emigration fever towards Greenland.

R. B. H.

STATISTICS OF MUSCULAR POWER.—Man has the power of imitating every motion but that of flight. To effect this he has, in maturity and health, 60 bones in his head, 60 in his thighs and legs, 62 in his arms and hands, and 67 in his trunk. He has also 434 muscles. His heart makes 64 pulsations in a minute; and, therefore, 3,740 in an hour, 92,160 in a day. There are, also, three complete circulations of his blood in the short space of an hour. In respect to the comparative speed of animated beings, and of impelled bodies, it may be remarked that size and construction seem to have little influence, nor has comparative strength, though one body giving any quantity of motion to another is said to lose so much of its own. The sloth is by no means a small animal, and yet it can travel only fifty paces a day; a worm crawls only five inches in fifty seconds, but a lady-bird can fly twenty million times its own length in less than an hour. An elk can run a mile and a half in seven minutes; an antelope, a mile in a minute; the wild mule of Tartary has a speed even greater than that; an eagle can fly eighteen leagues in an hour; a Canary falcon can even reach 250 leagues in the short space of sixteen hours. A violent wind travels sixty miles in an hour; sound, 1,142 English feet in a second.

THE INTERNAL TRANSPORTATION AND TRAVEL—ITS MAGNITUDE AS AN INTEREST.

FEW persons, who have not taken the trouble to examine the statistics, and to submit the subject to the scrutiny of figures, have a correct appreciation of the magnitude of the interest engaged in conducting the internal trade and travel of this wide-spread nation. We have heard much talk of the cotton interest, the sugar interest, the farming interest, the manufacturing interest, and various other interests, but they are all small compared with this vast and rapidly-augmenting transportation interest. It is the growth of comparatively few years, but it has attained herculean proportions. If we begin the comparison by ascertaining the investment of capital, we find internal transportation about, if not at the head of the list. We estimate the capital invested in this department of industry at *one thousand millions of dollars*. It is divided thus:

Railroads and their machinery, - - -	$600,000,000
Canals, - - - - - - - -	100,000,000
Steamboats, - - - - - - - -	70,000,000
Vessels in the coasting trade, - - -	130,000,000
Turnpikes, stages, wagons, and canal boats, -	100,000,000
	$1,000,000,000

The value of all the improved farms in the cotton-growing States of Louisiana, Texas, Arkansas, Mississippi, Alabama, Georgia, South Carolina, Florida, and Tennessee, in the year 1850, amounted to about $512,000,000. The capital invested in growing cotton is therefore much less than that invested in internal transportation. It will be perceived that we do not include in the comparison the value of the slaves employed in producing the cotton. By a similar course of calculatiou, it may be shown that the capital invested in the agents of transportation exceeds that of any *one* interest of production taken separately. The fact is, that it is nearly one-third the whole value of all the farms in the United States; the aggregate value of all the farms in the Union being thirty-five millions of dollars.

The gross annual product of all the agencies for internal transportation we estimate at $120,000,000, which exceeds the whole cotton crop of last year by about twenty millions of dollars. It is more than double the anuual product of gold in California, it is nearly double the value of all our agricultural exports for the last year, and ten times the amount of exports of manufactured articles.

One of the great advantages conferred on the country by this vast interest is the employment it affords to productive industry in the constant and increasing demand created for machinery of transport. Thus, on the fifteen thousand miles of railroad now in operation, there are in use six thousand locomotives, and fifteen hundred steam engines are in use on boats.

The engines on boats cost - - - - -	$12,000,000
The locomotives cost - - - - -	54,000,000
Total, - - - - - -	$66,000,000
It will require for renewals each year—	
Locomotives, - - - - - - - -	600
Locomotives for increase of business, - - -	60
Total locomotives to be built per year, - - -	660

These locomotives will cost $5,940,000. It will require 165 new engines every year for steamboats, which will cost $1,320,000, making together $7,260,000 as the amount of the annual demand for steamboat engines and locomotives.

There are on the fifteen thousand miles of railroad about one million, seven hundred and twenty-five thousand tons of iron rails, etc. We estimate that these rails must be renewed in fifteen years. There will be required then 115,000 tons of railroad iron each year for renewals, which, at $60 per ton, makes $6,900,000.

We also estimate that there will, for the next twenty years, be 1200 miles of railroad constructed each year, that will require annually 1,380,000 tons of iron rails, costing $8,580,000, and 400 locomotives that will cost $3,600,000. These sums make an aggregate of $26,040,000, that must be expended each year merely for the renewal and repairs of iron rails and engines required to effect the transportation of produce, and the travel of passengers on railroads and steamboats. This is entirely exclusive of the ordinary repairs on the hulls of the steamers, and the wood and earth work of the railroads, which annually amounts to a very large sum.—*Louisville Journal.*

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

TASTE IN RURAL HOMES—ITS INFLUENCE.

MESSRS. EDITORS :—Home is the spot where our warmest affections center. What place is more endeared to us, or to what do our thoughts more often revert, amid the bustle and hurry of life, or even amid the infirmities of age, than the place of our childish sports. The influence which home exerts upon character and circumstances in every period of life is great. It often gives shape to our character, and materially increases or diminishes our happiness. Home influences, that are exerted in childhood, frequently give direction to all subsequent life. Among men we find very different views respecting the beauties of nature and of art, and, consequently, we see a great diversity in their practice. One has but little appreciation of beauty, The tasteful cottage, ornamented with walks, and flowers, and shrubbery, hardly secures a passing glance. Utility is his watch-word. Gold glitters in his eyes, and all the refinements of social life are sacrificed for its accumulation. He may have a dwelling, convenient in size perhaps, but destitute, both externally and internally, of almost every thing that can gratify a refined taste. There it stands, like a pyramid in the desert, without a tree to ward off the rays of the sun, or to break the force of the storm; without a shrub or flower to please the eye. The thistle and the noxious weed adorn the door-yard, if there be one, and often the dwarf elder, and the brier, take the place of the rose, the snowdrop, and the honeysuckle. And if the swinish multitude are not actually permitted to revel around the door, the sty may be in close proximity, and its exhilarating odors may compensate for the absence of the rose and the sweet-brier. The neat, gravel walk, with its shrubbery and flowers, are too expensive. They bring no gold to fill his coffers, and, therefore, possess no attractions.

And the interior of such a dwelling is too often a counterpart to its exterior. For the sake of gain, convenience for performing domestic business may, to some extent, be consulted, but taste and elegance are utter strangers.

The naked walls, without paint or paper, glare out upon the visitor; the floor, uncarpeted, exhibits but little neatness, and the furniture is in keeping; the centre-table, covered with books and periodicals, of a character calculated to improve the understanding, correct the judgment, and form the taste, is not there. A few antiquated books, of ancestral inheritance, a borrowed novel, with the county paper, compose the literature of their rising family. All things look to the great object of the occupants—the acquisition of money. The little elegances and conveniences that render home delightful are too expensive. They can not have them, though their interest, from hundreds, and, perhaps, thousands of dollars, secured by bond or mortgage, is annually increased by a large per-centage.

What a contrast is this to the neatly constructed cottage, tastefully adorned by the hands of art. Seen in the distance, it looks out from the graceful shade of the elm or the maple; and thus situated, its symmetrical structure, neatly painted, with its green blinds, catches the eye, and calls forth the admiration of the passing traveler. It gives beauty to the landscape around. It is *not* a spot "where *distance* lends enchantment" merely, for a nearer survey serves only to heighten the emotions already excited in the mind. The minuter shades of beauty unite their attractions with those more extended, and the result is, a keener relish is excited. The avenue, tastefully adorned with flowers of varied beauty; the lawn, interspersed with shrubs and evergreens; and the portico, where the honeysuckle and the climbing rose are trained gracefully over the light trellis—all contribute to inspire kindly feelings.

Enter the cottage, and we find the interior in keeping with the appearance without. Neatness and order meet the eye in every department. Happiness appears to have fixed her residence here. The books of the well-stored library, and the most useful periodicals of the day, occupy the leisure moments of its inmates, while often the sweet tones of musical instruments, with the sweeter tones of a human voice, soothe the agitated feelings, and soften the rugged asperities of life.

Such contrasts are every where apparent in our rural districts. There are those who despise every thing like beauty or rural taste. They look upon it as the offspring of weak and effeminate minds, and their dwellings are in striking coincidence with their sentiments. They may, perhaps, see beauty in the golden harvest, because it promises to increase their wealth; or they may admire their flocks and herds for the same reason. But the tasteful and the ornamental they leave for the ignorant dupe to admire—despising the beauties that God hath scattered around us in so rich abundance.

The question is often asked with a sneer, to what profit is all this array of flowers, and shrubs, and walks, and shade-trees? *They* can eat, and drink, and sleep quietly without them. And so can the brute; and the swine, or the ox, if they could gain access to such a scene, would soon render it all deformity and desolation again. But, still, these things exert a mighty influence upon men. They give rise to actions and states of mind that go far, not only to shape our present and future condition, but to influence the community. Silently they tell upon society. As the mind acts on every thing around it, so a reflex influence is exerted upon it, which gives shape and coloring to future life. What, then, *is* the influence that a correct taste, manifested in connection with the endeared spot called home, will exert? Objects that act upon the mind, tend to bring it into sympathy with them. They impart, in some degree, their own character; they leave the impress of themselves. Where all is deformity and disorder without and within a

dwelling, no wonder if we see character and actions corresponding; no wonder if we hear the profane oath, the vulgar jeer, and witness manners that are rude and coarse. All the objects around tend to foster these, rather than to elevate or refine the feelings. In the absence of all that is chaste and beautiful, we must expect coarseness and vulgarity. There is nothing in the objects around them to restrain the ungovernable passions of our nature, or to soften the asperities of an uncultivated mind.

But the beauties created by a refined taste, tend to produce the opposite of all this. True, the depravity of our natures may influence a person to break through all restraint, and to set at defiance every influence. But this does not disprove the legitimate effect of the influence in question. The beautiful will impart its character as well as the rude; and, under its power, what is coarse and vulgar will be held in check, and the delicate and refined be invigorated. In the calm moments of reflection, the mind perceives that the brutal and angry passions are intruders amid scenes sacred to refinement; that coarseness and vulgarity are rendered more hideous and deformed when surrounded by the beautiful and sublime. You may often judge the character of the inmates of a cottage by the scenery around. Where neatness, and order, and taste reign without, you may expect refinement and intelligence within. Even the child that meets you will exhibit a disposition moulded by the influences around him, and the stranger may expect civility and a hospitable welcome within. "The manners of the roughest clown will be somewhat subdued, as he enters the threshold erected and furnished by a refined taste."

It may be said, that the time spent in adorning our homes, and thus rendering them pleasant, tends to foster habits of idleness, and to the neglect of more important business. But such assertions are generally false. A cultivated taste is more generally the ally of industry. Do we find the inmates of a tastefully-adorned cottage among the idle, or the profligate; among tavern-haunters and gamblers, or the inmates of a poor-house? The reverse is true. And if the idle and intemperate would spend the time they squander, and the money they worse than waste, in pampering their appetites and lusts, in efforts to render their homes attractive and happy, they might bless their families with many comforts, and many sources of pleasure of which they are now destitute, and these would bind them more closely in affection, and make them and the community happier. Or let the avaricious miser spend but a part of the interest of his wealth in thus cultivating in the minds of his offspring a correct feeling and taste, he might do society a favor, and, perhaps, save his children from forming tastes and habits that shall only fit them to curse his memory, and squander his hard-earned treasures, when he shall be silent in the grave. The man of cultivated taste employs his *leisure* moments in adorning his dwelling, and thus secures his object without encroaching upon the time demanded for more substantial employment; while the fault-finder employs these moments in sleep, or idleness, or gossip with kindred minds, or in slandering the neighbor whom he envies; and thus, while his business thrives, his cottage and garden assume an air of neatness and comfort. His children, instead of being left to patrol the streets in search of company or mischief, listening to the vulgar ribaldry and profaneness of uneducated minds, or mingling in the angry broils that disturb the quiet, are taught to find enjoyment amid the beauties with which they are surrounded, or to engage in the active labor of adorning their home, and rendering it happy. The trees and flowers, cultivated with their own hands, become as it were the companions of their childhood, and an attach-

ment is thus often formed for home, that saves them from the vortex of dissipation, and checks the roving, restless disposition often exhibited in youth. A taste is thus formed, and habits of industry, that are the precursors of success in future. It costs but little time or money to make a rural home inviting. I do not argue for expensive and costly adornments. Many are the flowers and shrubs, indigenous to our native soil, that surpass in beauty many exotics. And these may be easily transferred to ornament our residence. Where other circumstances are in equal ratio, it is believed that the man of taste will be the most prosperous and happy man. And the family brought up under such an influence, will be the most orderly, useful, and industrious members of society. A writer has well remarked, "when I see the new married couple with no object about them tasteful, by a kind of instinct, I mark them out for ultimate poverty."

Let a correct taste be diffused through the community, and what a transformation would the landscape present. The unsightly deformities of nature would be concealed, or moulded into shape. The hill-top would be leveled, or crowned with beauty; the morass be changed into the luxuriant meadow, and the unsightly avenue shaped to romantic beauty. And who would say that society would not be happier? In what neighborhood would you wish to fix your residence; where there is an absence of all that can delight the eye, where all was deformity and disorder, or amid the abodes of refinement and taste, however lowly.

What, then, is the duty of parents in relation to this subject? Children are generally pleased with the beautiful in nature; and in the forming period of life, it needs but little effort to give a right direction in this respect to their feelings and pursuits. The effort of the parent seems only seconding nature in her struggles for development. But such I deem is not the part of wisdom. Among other preventives against vice and dissipation, against idleness and profligacy, against boorishness and vulgarity of manners, let the parent early inculcate in the mind of his child a love of the beautiful and sublime. Let him train him up to habits of order, neatness, and industry, and early cultivate the feeling that he must lay the world under obligation to him, because he render the little world about him, the sphere in which he moves, more happy, more fertile, and more beautiful.

HORTENSIO.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

THE IMPORTANCE OF FARM REGISTERS AND FARM ACCOUNTS.

MESSRS. EDITORS:—Perhaps there is nothing of so much importance, that is so much neglected by the farmer, as the practice of keeping a diary, or farm register, and a strict account of all his receipts and expenditures. How many farmers are there within the circle of your acquaintance, who can tell how much money they have received during the year, and for what; whether the profits, if any, have been derived from their corn, hay, or wheat, from their horses, cattle, or hogs, and upon which they have sustained a loss; whether their crops have been worked in due season, and with a judicious economy in every particular; how much corn, or its equivalent, it will take to produce a pound of beef or pork, and what method of feeding will give the greatest return. I fear that, upon examination, the number found who

could answer these questions correctly would be few indeed. And why is it so? One reason is, the careless and shiftless manner in which farmers generally manage every thing connected with farm work. What would you say of the merchant who followed his business in such a manner, some branches of his business being attended with a certain loss, and unknown to him, solely because he neglected to keep a strict account upon each branch? You would say, that he would be obliged to sell out, sooner or later, to save the sheriff the trouble. But the merchant, even in our small county towns, deems it indispensable to success in business to keep an accurate account of every transaction. Then let the farmer adopt such a course. Let him keep an accurate account of his receipts and expenditures, profit and loss, upon each item, and every branch of his business, or with every field. Let him carry a small book in his pocket, and daily note down the various items of work for each day, together with such practical suggestions as may occur to his mind; and, my word for it, he will find himself much the gainer in a pecuniary point of view, while he secures, also, much gratification and pleasure in a review of his labor from year to year. The farmer would then know at a glance from what crops, what class of animals, and what course of management, he receives the greatest profits, and on what he sustains loss. Would not this be a knowledge of the greatest benefit in determining his course for the future? Let this practice become general, and the benefits arising from it would soon be made manifest in the improved condition of the farming community. They would be seen in the greater interest which would be awakened in those who now follow in the same old, beaten paths which their fathers trod, and who keep no accounts except such as they record with chalk. We should then see a desire on the part of farmers to possess a "little farm, well tilled," rather than to add acre upon acre to their already large estate, which has been rendered unproductive by shallow plowing, scanty manuring, and a hurried cultivation. We should then see agriculture taking that stand which its merits demand. J. W. A.

No. New-Salem, Mass.

TAKE CARE OF YOUR FRUIT.

Now is the time—and the caution would have been better a month earlier—to look to your trees. The enemy is upon you who is as deadly as the Philistines. If you find him and secure him, well; if not, you will probably have occasion to regret the failure hereafter.

Prof. Mapes gives directions to pour boiling water on the lower part of the trunk of peach trees, a quantity sufficient to cook the worm, doing no harm to the tree. Three gallons of boiling water, he says, may be used around each tree.

In manuring trees, apply the manure, not around the trunk, but nearly under the extremities of the branches. The roots extend about as far under ground, generally, as do the branches above it, though, of course, the ratio is not exact nor uniform, but modified by the soils, moisture, &c,, as well as by the nature of the tree.

We have before stated that it is our belief that peach trees do better if not transplanted, but allowed to stand where they came up. We have known such trees, and only such, bear fruit well for more than twenty years. Others attach no importance to this fact. But we should like to hear of transplanted peach trees bearing good crops for that length of time. Such ave not come under our observation.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

FARMING IN EAST TENNESSEE—GOOD CORN-BREAD.

DEAR EDITORS:—After a drought of over twelve months, a fine, seasonable rain has this week fallen. All nature is now enlivened, invigorated, and revived. Wheat, clover, timothy, and grazing grounds, are spreading their lovely green mats to the eye, promising a rich harvest. Our farmers have had every possible advantage during the winter, to early pitch a crop this spring; and most of us are at least one month in advance of our usual time of readiness for planting. Many are done ploughing, and are waiting the proper time to plant. The drought has been anomalous; and many of our old weather-astrologers say that the rainy season will now pay all it owes us. But, in the face of this prophecy, our hope is, that such will be the order of providence, that an abundance of the good things of the land will be gathered in due time; for the effect of the drought has been upon the soil to mellow and pulverize it. The dry winter, which has been cold, has done much in this important particular; and, indeed, something very uncommon or unnatural must take place, or a beautiful crop of all kinds must result. But *tempus omnia revelat.* Then, if time reveals all things, without time, all things cannot be revealed. So, time only can reveal the certainty of our coming crop-season. But when I set down to write, I thought to have been able to draft something worthy of your columns; but it is said,

"———————————some in spite
Of their blundering, *will* ignorance write."

So it is with me; but, then, an excuse prompts me that

"A little nonsense now and then,
Is relished by the best of men."

So, if I can hope to entertain you personally for a moment, I shall be amply requited, without humiliating your very valuable periodical with its publication. And, now, if your kindness will in any way justify the preliminary, I will take up my experience in furnishing your many agricultural readers with what I believe to be indispensable in furnishing for the table a good, palatable, nice, luxurious necessary for that department—to wit: CORN-BREAD. This article of food stands in the West at least at the head of our list of necessaries; and it is but little trouble to make it, likewise a luxury. I have, as your readers no doubt all have, before now, seen the paper account of what I may say, and I can only insist upon a trial; and if, upon a trial, the value of the method is not acknowledged, then it will be that I shall be for once deceived. Your readers all know that to have good, palatable food on the table, the art and mystery lies not altogether in the cookery. This is merely one part of the business, that must be well understood, and properly attended to; and, generally, our good housewives are adepts in this method without our aid. Then it is the business of the male department to see that the article for cookery is furnished in the pantry, clean, sweet, and nice, unmixed with any foreign matter, and prepared in the proper manner. Well, what of corn-bread? Some, I know, prefer old Virginia ash-cakes, as we are pleased to call them, and do not intend invidiousness when we apply the term either, for they are good. So are our johnny-cakes, hoe-cakes, dodgers, etc. The peculiar manner of baking to taste, I do not wish to talk about; but the way and manner of furnishing the meal for the cook is the

object of my writing; and this, as I said, is the result of a trial upon my former reading. And what is the secret? It is this: Gather the corn in the fall, of course, when it become ripe, and put up dry *in the shuck*—shuck and shell as needed to grind for use—and by this means alone you will secure bread with all the glutinous, saccharine qualities of *new* corn-bread, at all seasons of the year. I suppose it need not be insisted that new corn-bread is nicer and more palatable than old, for this is not debatable. The shuck, if dry, serves as a preserver of the corn in its native, sweet state. Shuck it, and no apartment will keep it in like condition. The atmosphere seems to extract from the grain the qualities alluded to, and leave it dry, brittle, and tasteless, when made into meal and baked. I hope, and, in charity, expect, that no one will trifle with this simple suggestion of mine, until he shall, as I have done, found his opinion on actual experiment; for, in my acquaintance, our farmers generally, and almost universally, shuck their corn, and crib it in the ear in bulk, after being so shucked. This, for stock-feeding, can yet be done, but for table use, it should not be so done. Will any of your readers, who have not, try the plan and report; and, in the event of disagreement, suggest some other and better mode of harvesting and preserving corn for bread. The one now used is certainly admitted by all as objectionable, in many particulars, which I need not take time to enumerate,

Very respectfully, A. L. B.

Mill Bend, Ten., March 15, 1855.

NASCENT MANURES.

This matter of mineral and vegetable manures, their real value, proper use, etc., can scarcely be overrated in its importance.

We find a learned essay on this subject from Dr. Stewart, of Baltimore, in the *American Farmer;* and though we are not quite ready to endorse all the opinions of learned chemists on this subject, we think the following very valuable. The appropriation of simple gases, which these gentlemen deny, is not yet disproved in our judgment; but we hope soon to have the whole story from them, or one amply qualified to treat the subject, namely, the writer of the following:

"Reasoning from analogy, all manures must be presented to the plant in the nascent state, in order to their assimilation; but a safer proposition, perhaps, would be, that many elements of plants, while they exist in their normal or natural condition, are as perfectly unassimilable, or as incapable of affording nourishment to them, as they are to animals.

A hundred illustrations of this law will at once occur to every intelligent mind; and the facility with which even inorganic compounds unite while in the nascent form, is familiar to all. Every molecule of matter, whether composed of compound, or simple atoms, seems to have a form of its own, and until it has assumed this form, or state of aggregation, it is in the nascent state, or in an allotropic condition.

While in this nascent state, its tendency to unite with other bodies which have an affinity for it, is wonderfully increased; indeed, it is often the only condition in which two substances will combine. The celebrated Faraday attached so much importance to this nascent, as contrasted with the normal condition, that a few months since he expressed the opinion that ozone is merely oxygen in the nascent, or allotropic condition.

Lime and magnesia, when recently slacked, are capable of uniting more freely with other substances; if, however, the slacked lime or magnesia is kept for a long time, even although perfectly excluded from the air, it will gradually assume the form of granules, and subsequently these molecules will form crystals, or the lowest order of organisms; and these organisms seem to possess a degree of resistance to external force analogous to the resistance of the higher organisms; indeed, the more perfect crystals of the same substance, and in the same solution, will grow and become more perfect, at the expense of those which are irregular. Upon this principle, the imperfect crystals may be said to be approximating to the allotropic condition, or nascent state, while the perfect crystal is in the normal condition.

It may be said that extent of surface is one of the causes of this, and a better illustration is sand, or quartz, which is perfectly insoluble in its natural or normal condition, however fine the powder, even in some of the strongest acids. But sand or silica is frequently found in the nascent condition, and then it dissolves readily in water; moreover, it can be kept in this condition for years; but if heated to the temperature of 260° it assumes its normal condition, and becomes perfectly insoluble even in acids; whereas before, it would dissolve in acids, alkalies, or pure water.

Lime and magnesia, while in the caustic state, are capable of converting sand into soluble silica; and this is perhaps one of the good effects of liming, especially when we consider the remarkable influence that soluble silica exerts in absorbing ammonia from the atmosphere, and also from ammoniacal manures. We may also account thus for the crumbling of stable walls, the moist condition of old walls, and especially those that are exposed to ammoniacal exhalations. Moreover, we have a plausible mode of accounting for nitre beds, and the remarkable value of old plaster; also the purifying influence of 'white-washing,' if it is done with caustic lime, and not with whiting or carbonate of lime. Lime, while caustic and moist, in contact with sand, converts a small part of the surface of the grains of sand from the insoluble to the soluble silica; and this is the reason why caustic lime is necessary to the formation of good mortar, as it is not (as is almost universally supposed) a mere mechanical mixture of lime and sand, neither is it grains of sand cemented together by the induration of lime, but the actual solution of the surface of the grains of sand produces a still more intimate union.

Well, this soluble silica gradually absorbs from the atmosphere the ammonia, for which it has a remarkable affinity; and as ammonia is the vehicle of poisonous exhalations of disease, as well as the perfume of flowers, these exhalations are so concentrated upon the walls of hospitals, that it sometimes becomes necessary to remove the plastering, in order to get rid of Erysipelas and other diseases.

Nearly, or quite all of the nitric acid of commerce, was no doubt originally derived from ammonia, in the order above referred to; for, if my theory, as above stated, is admitted, then, every authority will sustain me in saying that old plaster contains ammonia, and this ammonia is converted into nitric acid on the wall. Salts of nitric acid can be seen by any one on the surface of old walls. Moreover, the leachings of old walls have frequently been used in the manufacture of gunpowder, and old plaster always enters into the composition of artificial nitre beds.

It will be readily admitted that silica can never enter the rootlet of a plant, however fine the powder, unless it is in solution, and that the finest powder of sand or silica differs as much in solubility from nascent silica, as sand differs from sugar. The importance, then, of soluble silica to grasses and

wheat, and especially to corn; and, indeed, its value as manure has long been recognised; (see Liebig's Chemistry, Am. Ed. 1841, p. 200.)

It was first supposed that potash was the vehicle for its conveyance to every part of the plant; but the modern idea is, that ammonia is the main instrument of its conveyance; certain it is, that it loses its base at the instant of its deposition on the stem; and if potash were the base, then it would be necessary that the potash be carried back again to the earth, and the plant would be constantly embarrassed by the excrementitious matter; whereas, the ammonia being volatile, evaporates, and leaves the glassy coating, or element of strength, on the surface of the stem. Thus, it is found that more ammonia is actually exhaled from plants than we ever give them in the form of manure; and it is strongly suspected that soluble silica is really the manure, while ammonia is merely the vehicle for the conveyance of soluble silica through the plant.

When the carcass of an animal falls in a field, the luxuriant grass or grain 'falls,' on account of the absence of the relative amount of soluble silica, or the excess of ammonia uses up at once all of this necessary element that is available.

Two years since, I manured two lands in the centre of my oats field, the one with Peruvian Guano, and the other with soluble silica, leaving a land unmanured between. The proportion of straw on the guanoed land was very much increased; but last summer, the same field was in wheat, and a corresponding diminution in the proportion of straw was noticed on the land that had been guanoed two years since; and what is more remarkable, the lands on each side of the guanoed land, averaged 746 lbs. more of wheat straw per acre, although no manure of any kind had been applied to either since it was in oats. Whereas, the silicated land not only produced more straw than either of its unmanured neighbors, but also excelled the guanoed land in wheat nearly three bushels per acre, and ripened earlier than any other part of the field.

The difference between the silicated land and the unmanured, averaged 1966 lbs., while it also produced nine and one tenth bushels of wheat more than the adjoining unmanured lands.

A land of my oats field of last summer, exhibited the same increase in the weight of the straw, although no silicates have been applied since it was in corn two years since.

But the most remarkable result was obtained in my corn field of this year, where the corn on the silicated portion averaged 93 lbs. per shock, while the part unmanured only weighed 42 lbs. per shock; each shock represented 64 hills of corn, and the average of 31 shocks was taken. This manure was applied in my presence, and I personally gathered and weighed the produce of each separate shock in the field, with my own hands; therefore, I can vouch for the correctness of the results. And now, can we not account for the well known and remarkable efficacy of dissolved bones on this principle, when compared with normal phosphate of lime, whether it be in the form of bone-ash, ground bones, or phosphatic guano?

Bones have been used with profit, at the rate of $20 to $60 per acre; and it has been repeatedly demonstrated that one bushel of dissolved bones, for immediate effect, is equal to five times as much ground bones; in other words, that one pound of nascent or soluble phosphate of lime, is worth more than five pounds of normal or natural phosphate of lime, or bone earth. It will be admitted that every acre of land on the face of the earth, contains from one-tenth of one, to four per cent. of lime and magnesia; and of only

one-tenth of one per cent. at the depth of cultivation, even then, each acre must contain 1500 to 2000 lbs. of lime and magnesia. Now, it is manifest if 10, or even 30 bushels of dissolved bones were applied to an acre, the first rain would convert all of the free phosphoric acid, or bi-phosphates that they contain, into neutral nascent sub-phosphates; and it is therefore nascent sub-phosphate of time that is taken up and assimilated by the plant. Thus, we are enabled to account for the wonderful effects of what are called in commerce, bi-phosphates, which really contain very little free phosphoric acid, but all of the phosphoric acid exists as natural nascent phosphate of lime.

The fact is, that dissolved bones are unmanageable as a manure in this country, [in England, bi-phosphates are applied in solution,] until reduced from a fluid to the form of a powder, by the means of ivory black, guano, or some less valuable diluent; and the universal distribution of carbonates of lime, etc., in these, converts nearly all of the bi-phosphates into neutral nascent phosphates or sub-phosphates. During the past summer I have been experimenting on two separate fields, with four of these compounds, two of which were made in New-York, and two in Baltimore. The most remarkable results were obained from experiments made upon a few hills of corn. But I will confine my statement to two series, where whole rows of shocks were compared with contiguous unmanured rows; the average of 23 shocks, each shock representing 64 hills, exhibited a difference of about 25 per cent.; or the manured weighed 56 lbs., while the unmanured weighed 42 lbs. per shock; and these manures were applied in my presence, at the rate of ten bushels per acre broadcast; and I gathered and weighed the corn in the field myself.

Now, it is most probable that no atom of free phosphoric acid, or bi-phosphate of lime, ever enters the rootlet of a plant without destroying it; and, having proved that a solution of bones would necessarily become precipitated in contact with any soil, we are driven to the conclusion that this precipitate or nascent sub-phosphate is *the* valuable manure; and we take it for granted that it will preserve the nascent form for some time in moist situations, as we know that moist oxide of iron will continue to preserve this form, as the antidote for arsenic, for weeks together. Ultimately, however, it also loses the nascent and assumes the normal form, and becomes so insoluble, that five times the dose is required, in order to afford the soluble material for the same proportion of arsenic. Thus it is with phosphatic guanoes and bone dust; none of them are absolutely insoluble in pure water, and when thus dissolved as sub-phosphates, they are converted into the nascent form, and more readily re-dissolved than before their solution.

The contact of a piece of wood or string has been known to hasten the solubility of the most insoluble substances; for instance, the inner part of the metallic worm of a still, opposite a wooden support has been known to dissolve in the distilled water passing through it, and the same remark is made with regard to hydrant pipes; the normal condition of insoluble bodies is then disturbed, and the allotropic or nascent condition produced, by contact with vegetable substances in a state of change; this, then, may account for the influence of organic manures, and indicates the philosophy of the modern plan of manuring in Europe, which is by hauling out the manure on the field, load by load, as it is generated, instead of permitting it to ferment in heaps in the stable-yard. Now, query, would it not be still better to stratify it with powder of feldspar, phosphorite, or phosphatic guano, and concentrate this disturbing force of fermentation upon the elements, which, when reduced to the nascent state, are worth more than the one or two per cent. of alkalies, etc., in the manure itself.

It is still a question with physiologists whether nitrogen is ever assimilated by plants, much less by animals, in its normal condition; and it is a curious fact, that both the plant and animal may starve when fed on carbonaceous food exclusively, although both are bathed in an atmosphere containing four-fifths of nitrogen, which is perfectly useless to both, because not presented in the nascent form.

DAVID STEWART, M. D.,
Chemist of Maryland State Ag. Soc'y.

Baltimore, Jan. 24th, 1855.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

CATTLE AND THE PROSPECTS.

MESSRS. EDITORS:—In this section of the country, I am confident that beef-cattle and milch-cows will be high for the coming season. Hay is, and has been, very high with us. All the straw, and rough fodder of every kind, has been gathered up for the cattle and horses. Straw, even, has demanded, and still demands, a high price throughout this section of country. In former years, we never used to think of selling straw at a high price, unless in the bundle; and now it readily commands $7 per ton; hay, at from $12 to $16 and $20; and corn-fodder at a like rate. Scarcity causes this great demand. Men have large numbers of cattle on hand, and must have something to keep them through the winter; and, rather than let them starve, they are willing to pay high prices for their stores. Will this not tend, then, to make beef high? Certainly; though it is high enough now. Good, fat, working oxen, weighing from thirty-four to thirty-six hundred, have sold here lately for $200 per pair—showing that our home market is about as good as your city markets. I think that the present and prospective demand for beef is, and will be, good, considering that the forces in the Crimea will have to be fed—not only the English and French troops, but also the Russian. Some of our own markets have not been very well supplied with beef during the last year. This is not strange, when we consider that, for the last year or two, there has not been much feed for cattle to fatten on; hence the complaint that the New-York market is over-burdened with poor beef. I do not see that the prospect is likely to be any better for the year to come. Cattle, in different parts of the country, are now in a poor condition, and it will take some time for them to get fat; and, more than that, they are not very numerous any where in the United States. Butter is high, and beef is high. What is the cause of it? Scarcity of the articles. The milch-cows have been either "dried up," or sold in consequence of poor feed. Beef-cattle have been mostly picked up, though there are yet thousands of them left, with thousands of hungry people to eat them. Just about here, I can not say that we have many fat cattle to sell, nor a great number of milch-cows; though we think that our country is a very fair cattle region, comparing favorably with most other counties.

Raising cattle is good business, but producing hay is a better business, at present prices. A cow, or an ox, will almost consume hay enough, during a long winter, to buy its own body. Farmers could not get along were it not for the fact that they "work in" a great deal of coarse stores, including corn-stalks, straw, etc. Butter, it is true, is high; but all the cattle kind do not give milk, but store away fodder, for which the farmer, many times, does

not receive an equivalent. Should we all raise hay and no cattle, the result would be, no market for our fodder.

From private Western correspondence, I learn that cattle are suffering for want of food in many parts of Ohio. This is to be regretted, since that state is a great cheese and butter-producing country. I am of opinion that beef and butter will be high for the coming season, though I may be wide of a correct calculation.

The prospects of the farmer, otherwise considered for the coming year, are, indeed, quite flattering—that is, if he can raise any thing to sell. His mistake last season was, that, in many instances, he had nothing to dispose of—no wheat, not many oats, nor a great supply of corn and potatoes.

The peach-buds here seem to be dead. I should think that they had received their death-blow. The inside of the bud is black, with no indications of life. Some of the last year's shoots bear evidence of having been badly bitten by the frost. Thermometer stood here at from 25° to 31½° below zero.

Very respectfully, W. TAPPAN.

Baldwinsville, N. Y., March 20, 1855.]

PLOUGHING—AMOUNT OF TRAVEL.

THE amount of work required on a given surface varies, of course, with the condition of the soil. Certain parts of the work may, however, be accurately calculated. The number of furrows, of a given width, the length of furrow traveled within given dimensions, etc., can be told by an ordinary schoolboy. In the *Soil of the South*, a table is given, showing the space traveled in ploughing an acre, with a given width for the furrow. These calculations are approximations to the truth, but not quite accurate. In ploughing a field 500 feet square, more than 500 feet must be "traveled" in by the team, or even by the ploughman. The team must travel at least ten feet at each end, beyond the termination of the furrow. Taking this estimate as accurate, and supposing the field to be square, (for, with the shape of the field, the number of furrows, and the "space traveled," will be materially changed,) and the breadth of the furrow seven inches, the distance traveled by the team in ploughing one acre will be about 15⅜ miles, instead of 14⅛, as in the table. With a "furrow slice 14 inches," the travel will not be, of course, "seven miles," as given in the table, but something more than 7½, and so on. The calculations, thus corrected, may be of some interest. The table as given by our Southern friends is as follows:

Breadth of furrow slice,	Space traveled in ploughing an acre.
7 inches.	14⅛ miles.
8 "	12¼ "
9 "	11 "
10 "	9 9/10 "
11 "	9 "
12 "	8¼ "
13 "	7½ "

By this rate of calculation, a furrow once in

2½ feet,	3⅛ miles.
3 "	2¾ "

HORTICULTURAL.

The Vegetable Garden.—The earlier kinds of vegetables ought to be in the ground by this time; and fancy seeds have been started in boxes, or under glass. The warm weather of early May invites you to give them room in the ground.

Currants and gooseberries, if they were not pruned in the fall, as it is well to do, should not be neglected now for a day. Dig up all the sods, grasses, etc., which are about their roots, and give them a slight dressing of manure,

Melons should be sown. Soak the seeds a few hours in water; dig a large hole two feet deep, and three feet in diameter; fill it with good, rich loam and fermented manure, and in this, when finely pulverized, place your seeds at proper distances, allowing for some to come up feebly, or to be destroyed. Then you will have melons. If a cold storm is likely to injure them, shelter them with some kind of covering.

Gardeners tell us that melons are exceptions to the general rule, since their seeds, more than one year old, produce better fruit, and run less to vines than fresher seeds do.

The Flower Garden.—Perhaps this is not yet laid out. If so, let us suggest that there are two styles, as we may call them, in one of which, the whole plat is divided into beds of various forms and sizes, separated by walks, of greater or less width; and the other, where the surface is chiefly covered with grass, on which various figures are cut, the grass and sods being removed from them, leaving them, after proper cultivation, in a suitable condition for flowers. These may be of various shapes, and forms, and sizes, including borders along the walks, circles, ellipses, triangles, etc., with mounds of various sizes, and shapes, and heights, and shrubs and evergreens duly interspersed, according to the extent of the grounds, and the character of the surface. The latter style, generally speaking, is more to our taste than the former. There is more of variety in it.

If the flower garden is designed to make a show from the windows, the walks, beds, etc., should run in a line parallel to them. Having a side view, the various rows of flowers will all be visible, while the naked ground will be more sheltered from view.

Planting, Etc.—Dahlia-roots, and the like, may now be safely placed in the ground. Give them a light loam, partly vegetable, not too rich, otherwise you will grow large plants rather than flowers.

Very soon it will be time for the smaller seeds. Prepare your grounds by deep spading, removing all the stones and rubbish. Transplant such perennials as require it, dividing those roots that are connected together.

Plant the larger and hardier seeds, but not too deeply. Generally, half an inch of depth is quite enough for the largest.

When the apple-blossoms begin to appear, sow the smaller seeds. These should only have a little sprinkling of very fine earth sifted over them.

If you attempt to cultiuate that splendid plant the Cypress vine, *Ipomœa Quamoclit*, in which nineteen out of twenty fail, first throw the seeds into scalding hot water, or "hot milk," and let them lie till the liquid is cold, or, in other words, for several hours; then bury them half an inch in good soil, and keep them alike from chills and from drought. The seeds may be planted in circles from one to two or three feet in diameter, at a distance of

six to nine inches apart. They should be trained on twine, fastened to short stakes in the circumference of the circle, and led to the top of a central stake about six feet high; or they may be trained over a trellis, forming a screen. If confident of a vigorous growth, the seeds may be a foot or so apart. But be sure to plant the seeds as early as the weather will permit.

Sweet peas may be planted in a similar manner.

DAHLIAS.—W. C. WILSON, Esq., of Baltimore, who has always one of the best private collections of Dahlias in America, writes the *Horticulturist*, (and Mr. Wilson is high authority) as follows:

"The following were the best dahlias in this latitude last season, and some of them were fine the previous year:

1. Reine des Belges.	7. Victorie.	13. Miss Ward.
2. Mrs. Hansard.	8. Cote d' Or.	14. Duchess of Kent.
3. Emperor Maroc.	9. Jonas.	15. Gen. Fauchier.
4. Elegantissima.	10. Elizabeth.	16. Unanimity.
5. Diamant.	11. Miss Wayland.	17. Flora McIvor.
6. Hyppolite.	12. Madam Zahler.	18. Forget me not.

These were the best of 120 varieties. The first five are unequalled as fancy flowers; the 6th, 7th, and 8th, are splendid self-colored. The 7th is remarkable for its full and perfect form; color, a rich crimson maroon."

HOW TO SPROUT OSAGE ORANGE SEED.—The following plan for sprouting Osage Orange seed may be of use, as many are unsuccessful for want of the proper knowledge. In the first place, having procured bright, plump seed, of last year's growth, if possible, put them in a tight vessel, and pour on them *boiling* water, until they are covered. Cover up, and let them stand until milk-warm—keeping them at this temperature, or warmer, until they begin to burst and sprout. Keep a wet cloth on top of the vessel, to prevent the seed from becoming dry. An occasional wetting with warm water will be necessary. A few days after the sprouts begin to make their appearance, the seed should be planted out in beds previously prepared. If the seed is good and properly treated, they will sprout in about two weeks.

ON THE CULTURE OF THE PELARGONIUM.

BY B. MUNN, LANDSCAPE GARDENER, NEW-YORK.

I HAVE seen no really fine geraniums in this country. The reason is obvious, and is this: the plants are not got into a fit state for blooming sufficiently early, and they are forced into bloom by the rapid increase of temperature before they have made and matured their proper growth. The consequence of this is, straggling plants and small flowers.

Let me recommend some amateurs of the flower to try the following plan: At this time (early in February) many have their geraniums in small pots, in which they were placed when cut down last fall. Repot them at once into pots eight or nine inches across, which is large enough to grow a pelargonium in *perfection*, although they may be produced larger in great pots. The compost for them—one-half old hot-bed manure, one-half good loam, with a small portion of sand if the loam is stiff. Put one piece of broken pot over the drain hole, and then, for drainage, put about an inch, or rather more, in depth of lumps of stiff loam as large as walnuts. This is a valuable resource to the roots by-and-by. Then put in the compost, and pot the plant

without breaking the ball of roots, and press down the compost round the sides of the pot, moderately hard, with a potting stick. Water them through, and put them near the glass in a house kept at about 50°. Give but little water until the roots have reached the sides of the pot—they will soon be seen at the drain-hole on turning up the pot. Then increase the temperature very slightly, and syringe the plants every day. As they grow, still keep them near the glass, and pull the shoots down horizontally toward the edges of the pots all around, and secure them to sticks. By degrees, they may, most of them, be brought down nearly to touch the edge. The growth will in another month be rapid, and the shoots and leaves will increase much in size. By the end of March, or early in April, the foliage will be of large size, and hang over and conceal much of the pot, and the plant will be filled up in the centre by growth, which the admission of light there (by the continued perseverance in tying out) has encouraged. Then the plant is formed —its growth vigorous, and it is fit to bloom. But this growth will require to be matured, and to secure perfection in the bloom, the vigor of wood-growth must be stopped. To effect that object, withhold water. Lay the syringe aside, for the present, altogether. Let the plants positively droop in the leaf, from want of water, for a few hours, but not longer, or you will lose much of the lower leaves, which will turn yellow. Some judgment is required in this operation, but it is soon gained by short experience. When this check has been given, supply the plants with water, but in small quantities, comparatively, for a week, giving it at the root and not with the syringe. The plants will immediately "knot" for bloom; and then, but not before, (still keeping them near the glass,) give them manure-water twice a week, and plain water daily, if required, for as soon as the ends of the shoots indicate by their thickness that the bloom-buds are forming, the supply of water must again be liberal as it was at first. The old-fashioned manure-water, made by stirring up a spade full of old hot-bed in a pail of water, *I know* will answer, and you know the strength; but with guano, *and its adulterations*, you may not know, and *may* spoil your plants, although it is very good when properly used. The above manure-water should be used clear, and diluted with water till it is about the color that a crust of burnt bread, two inches square, will give to a glass of water in which it has stood five minutes. The next object is to encourage the growth of the bloom, branches, and buds, but not the foliage, which is best effected by giving water at the root, syringing only now and then to keep off dust, etc., (for if the syringe is much used in this state, the plants get straggling,) and by giving all the air possible. When the flower-buds are just opening, some shade on the glass is necessary. Open canvass, or close, coarse netting, is the best thing I know of, because it does not *altogether* shut out the sun's rays.

I am aware that much must depend on locality and time of year, as to how far the above directions can be carried out. An experienced hand will do best to pot in December for the first set of plants, and in January for those to follow, because he can then stop the shoots (which, by-the-by, he should do, and let the plants break just enough to show the eyes in the small pots *before* potting,) and by this means he will have his plants much larger. But it requires some experience for this very early work to be done well. The *principle*, however, that I wish to point out is this: that in this country, the European system, as to *time*, must be varied, and the plants must be got to their full size, as to wood and foliage, before the time of spring, when the increase of the sun's power will necessarily force them into immediate bloom, without giving time for their bloom-branches and buds to be properly developed before the flowers expand.—*Horticulturist.*

THE PLUMBAGO LARPENTÆ.

[LADY LARPENT'S LEADWORT, OR PLUMBAGO.]

In 1846, Mr. Fortune found this beautiful plant on the ruined ramparts of Shanghai, in China.

All who have seen it describe it as one of the most charming blue flowery plants now known for bedding out in masses, as we do the verbena, petunia, etc. The *plumbago capensis* is a well known, useful plant for bedding out, but it seems to be the opinion of cultivators that this new one entirely supersedes it. It will undoubtedly prove much better adapted to our climate, and answer bedding purposes better, from its compact and bushy habit. It is described as having obovate, pointed leaves, finely serrated and firinged with hairs on the margin, as will be seen by the cut. The flowers are produced in terminal clusters, and are clear, deep blue, or intense violet color, with a tint of red in the throat, increased by cuttings of the young wood. An idea may be formed of the profusion of its blossoms from the fact that a single plant has borne 4,000 blossoms.

PLUMBAGO LARPENTÆ.

The *London Horticultural Magazine* says: "The plumbagos flourish in any light, porous, turfy soil, but in none better than where sandy loam preponderates. The present species must be particularly well drained, and not too freely watered. It may be propagated by cuttings planted in sand, and set in a mild hot-bed; these cuttings should, as in the case of other bedding plants, be planted in the latter part of the summer, and kept over the winter in green-houses or dry frames until the following spring.

For pot culture it will, doubtless, prove a very desirable subject. It must, in this case, be regularly shifted into pots containing a compost in which turfy loam preponderates, not using very large pots, and having these drained in an efficient manner. The plants should, while young, be well stopped back, the point of the shoots being removed as soon as practicable, after they reach from two to three inches long. This is to be continued until a good, round head of branches is produced, and the plant should then be allowed to grow on for flowering."

THE NEMOPHILA.

NEMOPHILA.

The *Nemophila insignis* is one of the prettiest of all dwarf annuals for the border, or for masses on a lawn. Its foliage is delicate and fine, and its flowers of a beautiful blue. It blooms in great profusion, and a long time. We extract the following notice from the *Horticultural Magazine* (English). There is another new and rare one, *maculata*, of a fine, dark violet, with a white spot in the margin of the petal, worthy a place among the select annuals:

"This is a showy annual of a dwarf growth, which soon displays abundance of small, blue flowers, a little cupped, having a pure white eye, and deeply-cut leaves. Its seeds may be sown at different seasons, a few in April, and a few at the end of September; for if the winter be not very sharp, they will bloom very early in spring, and those sown in the spring will come into flower by the time the autumn-sown ones decline. The young plants will bear removal, but I prefer sowing them where they are to bloom; there is, however, no harm in planting out the few that you take up from a patch when they have been sown too thickly; and some gardeners make them regularly potted plants, and, therefore, sow all in one place, and pot off or plant out at pleasure. They are very beautiful till they begin to straggle along the ground, when, although they still keep flowering a little, I should advise you to pull them up to make room for something better."

For this and the preceding engraving and the descriptions, we are indebted to the *Genesee Farmer*.

PEACH-TREES KILLED BY THE COLD.

Messrs. Editors:—Having lately noticed several quotations in the newspapers in regard to the extreme cold winter having killed not only the peach-buds, but the trees also—in cutting the limbs from one thousand trees, Mr. Schenk found no exception—all had perished.

A similar report was current in the spring of 1835, that the hard winter had killed all the young and thrifty peach-trees.

The nursery trees were certainly killed, not by the winter, bnt by an early, sudden, autumnal frost; before the sap had descended, or the trees were prepared for such a sudden transition.

Nurserymen who have been inoculating their trees late in the fall, will, no doubt, appreciate my remarks, as they have found to their mortification, day

after day, the bark and sap setting more and more, till they could not perform the operation successfully any longer. In the fall of 1834, there came an early, sudden frost; soon after which, my father, Samuel Champion, was trimming in his nursery, when he discovered that the sap and inner bark was of a dark yellow color, which somewhat alarmed him. In the spring following, his fears were too well realized. This and many other whole nurseries had perished from that early frost while the sap was circulating.

But more fully to prove the fallacy of an extremely cold winter killing the peach-trees, every farmer or wood-chopper in the northern, middle, or western States knows that large forest-trees are frozen through with ice to their center by the frost of ordinary winters; and if the cold was five times greater, it would do no more than freeze to solid ice. This does no harm to the peach-trees after the sap has gradually and naturally set. More than forty years ago, peach-trees generally lived to the age of twenty, and some of them thirty years old, in full bearing, healthy, and vigorous; but the trees now taken from the nurseries in the northern and middle states, seldom bear more than three or four crops, and some of them not more than one, whilst others never bear any.

In the future, I may indicate the means by which this most delicious fruit may be restored to its original size, flavor, and quantity—the trees to live and bear fruit for twenty years and upward.

THOMAS CHAMPION.

Washington, D. C., April 14, 1855.

CINCINNATI HORTICULTURAL SOCIETY.

THE List of Premiums for 1855, issued by this very efficient Society, is received, with their rules and regulations. These do not essentially vary, so far as we have discovered, from the rules of other societies, save in this, that COMPETITION FOR THE PRIZES IS OPEN TO ALL CULTIVATORS OF THE WESTERN STATES, and without payment of a fee. "All articles not donated to the Society must be marked 'RESERVED.'"

The following is a list of the officers and committees of the Society:

OFFICERS AND COMMITTEES OF THE CINCINNATI HORTICULTURAL SOCIETY.

PRESIDENT.—Dr. S. Mosher.

VICE-PRESIDENTS.—George Graham, A. H. Ernst, John P. Foote.

COUNCIL.—M. McWilliams, A. Worthington, L. Rehfuss, J. K. Green, G. Sleath, P. S. Bush, S. W. Pomeroy.

SECRETARY, TREASURER, AND LIBRARIAN.—C. C. Pomeroy.

CORRESPONDING SECRETARY.—J. A. Warder.

FRUIT COMMITTEE.—J. A. Warder, M. McWilliams, S. S. Jackson, J. K. Green, P. S. Bush.

FLOWER COMMITTEE.—J. P. Foote, Theo. Pfau, S. W. Pomeroy, D. McAvoy, Geo. Graham.

VEGETABLE COMMITTEE.—G. Sleath, D. Foster, A. Worthington, C. Pinkenstein, P. Considine.

PLUM-TREES.

A CORRESPONDENT of the *Country Gentleman* says: "I attribute my success mainly to an hereditary strain of Yankee principle, producing a strong propensity to use a jack-knife. My trees are mostly grafted on to suckers of the native or wild plum, near or at the surface of the ground. The scions take well in such stocks, and grow strong, frequently from four to seven feet in a season. In the spring of the first year, I cut back to two or two and a half feet, and each spring following, from $\frac{1}{3}$ to $\frac{7}{8}$ of the last year's growth. This causes them to grow stocky, with low, bushy heads, and to set thickly with fruit spurs. I have trees in different varieties of soil; some in cultivated, some in grass land. All do well. I manure with what is most convenient, without regard to kind or quality, long or short, stable or hog manure, ashes, old lime, soap-suds, fish-brine, chip manure, or whatever is at hand, plowed in or for top dressing.

The great enemy of the plum-tree is the black-knot. Now comes the grand question—Black-knot, what is it? Is it a disease, or the work of an insect? I will endeavor to answer these questions according to my observations. I consider it to be the work of an insect, with which I have no personal acquaintance except in the maggot state.

From frequent observation combined with practice, I find that June is the time to look for the enemy. There are no black knots then, of this year's growth, but simply swellings upon the branches. Now use your jack-knife, and you are sure of your foe. When these swellings first commence, so as easily to be found, the insect is of the exact color of the excrescence, and so small as usually to escape detection. Nevertheless he is there. From the middle of June to the first of July, they are easily found, generally two in a knot, varying from $\frac{1}{20}$ to $\frac{3}{8}$ of an inch in length—the largest in the mean time are leaving their cells. I have found them near by, sheltered by the rough bark, covering themselves with a thin, silk-like web. To all who wish to raise plums, (and who does not?) I would say, here lies the secret. Cut green knots instead of black ones. By following this practice, I have succeeded in raising very fine trees—not a black knot is ever seen on them. A swelling is occasionally found, but it is taken in time to secure the maggot. By this means, the insects are reduced to that degree that my trees never suffer thereby. I have trees from four to six years from the graft, from eight to ten feet high, with large, spreading heads, bearing the first season from one to more than two bushels per tree, of most splendid fruit, as many a satiated appetite can testify."

MORE COAL DISCOVERED ON THE PACIFIC.—Santa Anna, it is stated, availed himself of his recent march to Acapulco to test the accuracy of the reports that the mountains of Guerrero contain extensive coal mines. The result of his investigation satisfied him that there are almost inexhaustible supplies of this valuable article, which can be obtained in any quantity at Acapulco, at a cost considerably less than the freight on that now carried there from England and the Atlantic States for the use of our steamers. Santa Anna has also satisfied himself that the undeveloped precious mineral wealth of Mexico is immeasurably greater than has ever heretofore been supposed; and it is his desire and purpose to adopt measures to make these treasures available.—*Deseret News.*

BUTTER-MAKING.

[Our attention has recently been called to a very valuable and eminently practical Prize Essay, read before the Royal Agricultural Society of England. We published several articles on this subject, in our last volume, and are happy to find our own views confirmed by the very careful and scientific experiments, the results of which are given in the report described. We beg leave to invite the attention of all our farmers to the following portion of this subject, being all that relates to their particular business. The experiments were conducted by Professor Traill and the late Dr. Bullock. Their accuracy was subsequently tested by the writer of this essay, and his results, with one exception, "agreed remarkably with those made by the gentlemen named."]

One series consisted of the comparative quantity of butter yielded by the following:

1. Sweet cream churned alone.
2. Sweet milk and its cream churned together.
3. Sour cream churned alone.
4. Sour milk and its cream churned together.
5. Scalded or Devonshire cream churned alone.

On the 24th of May, the milk of four cows was drawn in the same vessel, passed through a strainer, and then divided into five portions of six English pints each, which were placed in similar basins of earthenware, in a place, the temperature of which ranged from 55° to 60° Fahr.

Monday, 25th.—The temperature of the air was very hot, 76°; but that of the milk-house, by constant evaporation of water, was kept about 60°.

Tuesday, 26th.—Thirty-nine hours after the milk had been drawn from the cows it was removed from below the cream of No. 1 and No. 3, by a syphon; the cream from No. 1, and the milk and cream from No. 2, were immediately churned in glass vesself.

No. 1.—Sweet cream churned alone. From previous trials it was found that the addition of cold water to thick cream facilitated the separation of the butter; half a pint of water was added to the cream, the temperature of the mixture at the commencement of churning was 62°. In fifteen minutes butter appeared in grains; the churning was continued for twelve minutes longer, or twenty-seven minutes in all, when the temperature was found at 70°. The butter was collected, but from the warmth of the weather was very soft. It was put into cold water until the next day, when it was worked and washed in the usual way, and weighed 1386 grains. It was of a good color, and perfectly well flavored.

No. 2.—Sweet milk and its cream churned together. The mixture of sweet milk and cream was churned at the same time; though cold water was added after one and a half hour's churning no butter was seen. The churning was continued three hours without obtaining butter.

No. 3.—Sour cream churned alone. On Thursday, the 28th May, the cream of No. 3, which had been separated on Tuesday, and placed in the milk-house, was now slightly acid, and was churned after half a pint of cold water had been added to it. In twelve minutes butter appeared; and in eight minutes more united into one mass. During the churning the temperature of the cream had risen from 54° to 63°. The butter was well washed and worked, and weighed 1756.5 grains. The color and taste were good.

No. 4.—Sour milk and its cream churned together. On the same day, 28th May, the milk and cream churned together, and half a pint of cold water was added. It was full fifty-seven minutes before any butter appeared, and before the churning appeared to be completed one hour and fifty minutes had elapsed; showing clearly that more time is required to churn milk and cream together than to obtain the butter from cream alone. The butter was diffused in small grains, and when washed and worked as long as any color was communicated to the water, it weighed 1968 grains. Color paler than the last, but of good flavor.

No. 5.—Clouted cream churned alone. On Tuesday, the 26th, the milk and cream of No. 5, were placed in a vessel of warm water until the temperature of the milk rose to 156°, a Devonshire dairy-maid assisting in the operation. The milk was drawn from below the cream by a syphon, the latter being kept cool until the following day, when it was churned.

It was ascertained that by churning the milk of Nos. 1 and 3, a few more grains of butter could be obtained on some occasions, but on no occasion from No. 5, so completely does the scalding process separate the butyraceous matter from the milk. The butter of No. 5, when well worked and washed, weighed 1998 grains. It had a rich yellow color, and tasted agreeably.

Similar experiments were repeated, the result of which was, that the largest amount of butter was produced by the Devonshire method; the next in quantity by churning the milk and cream together when a little acescent; the third in quantity was afforded by cream kept till it was slightly sour. The smallest quantity was obtained from sweet cream; but on no occasion was butter obtained by churning sweet milk alone.

In order to decide on the keeping qualities of the butter obtained by the four processes previously detailed, samples were exposed to the free action of the atmosphere.

No. 1 was always found to remain longer without any rancid taste than the other kinds.

Nos. 3 and 4 were nearly on an equality—if any difference, it was in favor of No. 3.

No. 5 became rancid more quickly than No. 3 and No. 4.

When salted for keeping, rancidity appeared in about the same order, commencing in No. 5, or the butter from scalded cream; next in No 4, from some milk and cream; then in No. 3, or sour cream; and lastly, in No. 1, obtained from sweet cream. The rancidity was supposed to arise from varying proportions of casein; and on instituting experiments to ascertain this fact, it was found that casein assisted in preserving its freshness.

In order to ascertain the effects of overchurning, the cream of six pints of milk was separated by a syphon, and churned in a glass vessel. The butter was formed in about half an hour; but the churning was continued for half an hour longer, when the butter had lost its fine, yellowish, waxy appearance, and had become pale and soft, while very little liquid remained in the churn. This butter could not be washed and worked until it had remained some hours in cold water, being so exceedingly soft when taken out of the churn. After washing it was pale, rather soft, and weighed 2566 grains, which was evidently beyond the due quantity, when compared with the other experiments on the same quantity of milk, which gave the following results:

No. 1. The sweet cream overchurned yielded 2566 grrins.

No. 3. The acid cream duly churned yielded 2187.5 grains.

No. 4. The acid milk and its cream duly churned yielded 2397.5 grains.

No. 5. Scalded cream duly churned yielded 2671.

The butter of No. 1 tasted insipid, never became firm, and soon turned rancid. It was found to yield a very unusual quantity both of casein and watery fluid, which could only be separated by melting the butter.

It is a common opinion in some districts, that by adding hot water to the churn, more butter is obtained than by using cold water. Experiments made for the express purpose did not show that the weight increased very much, and it was attended with a perceptible deterioration in quality, giving it generally the appearance of overchurning.

The results of the experiments above detailed are—

1st. That the addition of some cold water, during churning, facilitates the process, or the separation of the butter, especially when the cream is thick and the weather hot.

2d. That cream alone is more easily churned than a mixture of cream and milk.

3d. That butter produced from sweet cream has the finest flavor when fresh, and appears to remain the longest period without becoming rancid.

4th. That scalded cream, or the Devonshire method, yields the largest quantity of butter; but if intended to be salted, is most liable to acquire a rancid flavor by keeping.

5th. That churning the milk and cream together, after they become slightly acid, is the most economical process for districts where butter-milk can not be sold; whilst, at the same time, it yields a large amount of excellent butter.

COTTON AND ITS CULTURE.

A CORRESPONDENT writes to the *Farmer and Planter* as follows: "We never could see the sense of throwing up, with great care, a high bed for cotton, and immediately set all hands to work to tear it down. We have tried various expedients, but never found out how to plant cotton until last spring. For this we acknowledge our indebtedness to Capt. Thomas Byrd, of Greenwood, from whom we received an implement for smoothing and opening the cotton bed, which does its work to perfection—a cover adapted precisely to follow in the wake of the opening, leaving your beds nicely smoothed over, and ready for the reception of the seed, and a scraper to do the first working—decidedly the best implements we have ever seen. This forms a complete set of implements, adapted to cotton-culture, simple and cheap, which any good blacksmith and plough-stocker can make easily. If Novice will try Capt. Byrd's implements, and not agree with us, we will acknowledge the corn, and pay for them. Let us be understood, we are not puffing an implement manufacturer, but offering an acknowledment due to a public-spirited planter who took the pains to set us right. By the way, while talking, we may as well say that the best variety of cotton we have ever planted is the "Calhoun Cotton." Where it originated, we are not able to say. Capt. Byrd kindly sent us half a bushel of seed, from which we have picked 511 pounds of very beautiful cotton. The overseer counted seventy bolls on one stalk not over knee high. It is no humbug, for we have selected our seed for years from fancy stalks, and being side by side, we have been compelled reluctantly to give it up. We trust that even Broomsedge may be allowed to puff a home-made article. Before closing, we must dissent, however, from Novice's declaration. Twelve hundred pounds cotton per acre on common land—stand or no stand—it is no common land that will average seventy bolls of matured cotton per stalk."

DECOMPOSITION OF WATER OR STEAM BY HEAT.

We take the following extract from an exchange:

"But whatever may be thought of these, or of the many other more scientifically accurate, although, perhaps, less practical experiments, there is little doubt but that water is sometimes burned, and burned economically, when mixed in small quantities with carbonaceous matter. Mr. Moses Thompson, of Binghampton, N. Y., has lately patented, and is now, with considerable success, introducing a furnace for the burning of very wet fuel, which appears likely to affect the mode of conducting some of our less important steam-generating processes, and promises ultimately to succeed in sugar boiling, than which, perhaps, few discoveries are more desirable. Mr. Thompson has succeeded in burning wet tan, direct from the vats of some of our largest tanneries, and in generating therefrom an intensely white heat, sufficient to melt cast or wrought iron in a very few minutes. In fact, the high temperature generated and maintained in the furnaces, and the means adopted to attain this result, form the main distinguishing features of the invention. One great error in previous attempts to burn wet fuel, has consisted in admitting more rather than less air to the wet fuel. Mr. Thompson constructs his grates somewhat in the ordinary manner, but with greatly diminished spaces between the bars, depending for a large portion of the oxygen on that set free by the decomposition of the water. The process completely consumes the fuel without the production of smoke, but this is accomplished only by having two or more furnaces in connection, and supplying fresh fuel to one only at a time. The necessary high temperature is maintained by having the furnaces at some little distance from the boiler, and thickly casing them with fire-brick and other non-conducting materials, allowing the flame and intensely-heated gases to flow from the two furnaces into contact with the boiler after mixing together. The furnaces are ovens of brick, somewhat analogous in form, but more in temperature, to air or puddling furnaces for melting metals. The fuel is supplied through a cavity in the top of each furnace, and is allowed to pile itself up in a cone, with no regard to equal distribution over the surface of the grate. The flame passes off nearly horizontally into a mixing chamber, and thence to the boilers, under and through which it is allowed to flow in a manner similar to that usually employed in utilizing the waste heat from the iron manufacture. One furnace only being supplied with fresh fuel at a time, the steam escaping is sure to find in the mixing chamber, which is merely a place of junction of the flue passages, a sufficiently high temperature to decompose it. The grand features of the invention consist, firstly, in carefully cherishing the heat of the furnace to induce the production of an intensely high temperature; secondly, in mixing the gases from fresh fuel with those from fuel previously well heated; and, thirdly, in admitting a very limited supply of air. The degree of temperature attained is not, of course, ascertainable, even approximately, without careful and expensive experiment; but the fact that all metals introduced into the flue passages disappear very rapidly, and that the fire-brick roofs of the furnaces have an inconvenient habit of fusing and running down in vitreous streams, if proper precautions are not adopted, argues the existence of as high a temperature as any ordinarily employed in the arts. The fuel principally employed in these furnaces thus far is wet tan, oak tan being more suitable than hemlock tan, because of its greater coherence when partially consumed. The process of combustion

renders the mass highly porous, like honeycomb, the fire percolating it from beneath in countless streams, which, in case of oak tan, increase in size until the whole is consumed, whilst with hemlock the mass is continually crumbling down and stopping the passages. Several experiments have been lately made on the sugar plantations of Louisiana, in burning the megass, or crushed cane, direct from the rolls of the sugar mill. The only difficulty at present apprehended by the inventor relates entirely to the mode of feeding this bulky and trashy material. Several eminent sugar planters in the vicinity of New-Orleans, express their high hopes of its greatly increasing the efficiency of this species of fuel."

THE HORSE.

[A LECTURE upon the horse, by Mr. Zadoc Pratt, has been extensively published; and in the former volumes of this journal, numerous articles are found containing much information in reference to this noble animal. The view taken by Mr. Pratt is, however, so unlike the track generally pursued, that we have made the following abstract from this lecture for the benefit of our readers.—EDS. P. L. & A.]

"And now let me give you my idea of a good horse. He should be about fifteen-and-a-half hands high; the head light, and clean made; wide between the nostrils, and the nostrils themselves large, transparent, and open; broad in the forehead; eyes, prominent, clear, and sparkling; ears, small, and neatly set on; neck, rather short, and well set up; large arm or shoulder, well thrown back, and high; withers, arched and high; legs, fine, flat, thin, and small boned; body, round, and rather light, though sufficiently large to afford substance when it is needed; full chest, affording ample play for the lungs; back, short, with the hind-quarters set on rather obliquely. Any one possessing a horse of this make and appearance, and weighing eleven or twelve hundred pounds, may rest assured that they have a horse of all work, and a bargain which is well worth getting hold of.

I will now call your attention to different varieties of horses in foreign countries, and in our own.

The Egyptian horse is generally known by the name of the African barb. He exceeds the Arabian in stature, and is principally remarkable for the fullness and height of his shoulders, and the drooping of his haunches. The most remarkable of his tribe are the celebrated "drinkers of the wind." They are wiry and fleshless, and shaped something like the grey hound. It is related of one of these horses, that he once performed a journey of sixty miles, in the hottest period of a burning African day, without the rider's drawing bridle, or allowing him to relax his speed a single instant, until the journey was completed. The little African kingdom of Donkala is celebrated for a breed of horses of large size, which some have considered the handsomest in the world. Every attempt to introduce them into any other country has failed, however. The celebrated Egyptian horses were also ridden by the prophet Mahomet and his four companions, on the memorable flight from Mecca, in the year 622, and now known as the Hegira.

The Arabian horses are small, only averaging thirteen and fourteen hands high, rather inclined to be lean, and, in traveling, they rise higher from the

ground than any other blood horses, and gather more quickly. They are generally of a dappled grey, or dark brown color, with a short, black tail and mane. They usually run wild, and, in that condition, they possess the greatest mildness and generosity of disposition. After they are domesticated, they are played with by the children, have the most favored corner of the tent, and occupy a deservedly high place in the affections of the family. This affection seems to be returned with more than ordinary sagacity, for it is authenticated that, the master being in danger, the horse has put forth every power to the utmost, and so strained his endurance that, on reaching a place of safety, he has instantly yielded his life. They are usually captured by snares hidden in the sand, by which the feet become entangled, and the terrified animal, falling to the ground, is made an easy prey. Their amazing speed renders this the only method by which they can be taken.

The Persian horses resemble those of Arabia in general appearance, though somewhat larger. They are esteemed less highly than the Arabian, though I think they have some points of superiority.

The horses of Tartary are exceedingly swift, even outstripping the antelope; though here their resemblance to favorite breeds ceases entirely. They are large and very heavy-headed, very low in the shoulder, awkwardly made, and very ill-looking. When feeding, one of their number is placed on an eminence as sentinel, and on the approach of danger he starts off, the rest following like the wind. The fabled flight of Mazeppa, lashed to the back of a wild horse, is supposed to be among the wild herds of Tartary.

In Turkey, horses are held in the highest esteem, which they well deserve, being of the most docile and affectionate disposition. They are the result of a cross between the African and Arabian, and are full of fire and life, with a light make, splendid head, and great powers of endurance. The tail of the horse is considered an emblem of dignity in Turkey, from the fact that a Turkish army once lost its standard in battle, when the leader, to inspire the drooping courage of his men, cut off the tail of a horse, hoisted it on the end of a spear, and rallied his forces to victory. As a reward, he received military promotion, the emblem of which was a horse's tail. The rank of the owner is known by the number of tails he is allowed, the highest being three, and the officers are called "pachas of three tails."

The genuine East Indian horse is of small value, owing to the unsuitable climate, which seems to be highly unfavorable to his improvement, and the pure native-breed is small, ugly, and ill-made, being equally deficient in form, spirit, and endurance. By judicious and repeated crossings, and the utmost care in obtaining healthy stock, a species of horse has been introduced into the country which will compare favorably with any other. The greatest and most continued pains are necessary, however, or they will soon degenerate.

The European horses will next engage our attention. One of the most beautiful is the Spanish, or Andalusian, which originated from the Barbary horse, the only fault being that the head is large in proportion to the body; the mane is thick, long, and graceful; the ears long, and the eyes very animated. The Italian horses are very large and finely shaped; they were once highly esteemed, but are now principally used for carriage horses and for heavy cavalry. Danish and Swedish horses are stout and well built, but slow and inelegant. The Dutch and German horse is preferred throughout Europe as a draught horse. The Russian horse is large limbed and powerful, with long, stiff hair, standing out from the body, and is not very highly esteemed. The French horses differ much according to the portion of the country from whence they come; and the same may be said of the English and American, to which I shall now invite your attention.

The native English horses, even in the seventeenth century, were very small, though serviceable, and only commanding low prices.

After that time, in the seventeenth century, the breed of horses most in demand was the Spanish Jennet, and they were imported for all purposes of pageantry or war. The aristocracy had their coaches drawn by the gray Flemish mares, which were thought to trot with peculiar grace, and which endured better than others the labor of drawing the lumbering and heavy vehicles of that period over the then rugged and unpaved streets of London. The very common proverb of "the gray mare is the better horse," applied to those families where the wife is supposed to rule the house, is said to have arisen from the great preference given to the gray Flemish mare over the best horses of England. The celebrated English hunter is supposed to have derived its origin from a cross between the race-horse and some heavy Spanish chargers, brought into England in the reign of Edward the Third, and they have ever since formed a distinct class.

With regard to the horses of America, we learn that large numbers were brought over by the early Spanish and English discoverers. The first were imported by Columbus, on his second voyage, in 1493. The first brought to any territory now belonging to the United States, were landed in Florida, in 1527, by Cabaca de Vaca. They were allowed to run loose during the dissensions that followed, and multiplied to an almost incredible extent, especially in South America

The wild horses found in North America, when the West was first explored, were more hardy; they were of Spanish extraction, and had been brought into use by the natives to a great extent, though many wild herds of immense numbers still roam freely over the prairies of our western territories.

The race of horses which originated those now used in this country, and in Canada, were imported from various nations.

In 1609, one horse and six mares were brought to Virginia from England. In 1825, a few Dutch horses from Holland were imported into New-Netherlands, now the State of New-York. In 1604, M. L. Escabot brought the first horse into Canada and Nova Scotia, then known by the Indian name of Acadia. The first horse brought into Massachusetts was from England, and was imported by Francis Higginson, in 1629. In 1678, they existed in considerable numbers in Louisiana. The Indians on Red River, in Texas, used them in 1690. The early French settlers in Illinois had them in considerable numbers in 1750.

The same vessels brought over the first importations of cattle, sheep, and swine, and they have increased so as to form a most astonishing portion of the wealth of the country.

The West Indian horses may properly be classed with those of America, and they generally exhibit the characterising marks of the nation to which the island belongs.

The Canadian horses are of French origin, and to this stock we are indebted for most of the trotting horses of the United States. It is a marked peculiarity of the Canadian horse that he always trots, as the Arabian horse always canters. Other breeds exhibit all the peculiarities of movement, including the trot, canter, and amble, but the Arabian horse never trots, and the Canadian rarely canters. Beside the trotting horse, we are indebted to Canada for many of the most serviceable specimens of the cart and dray horse, of their size, and in the northern part of this State, in Vermont, and other sections on the Canada line, they are met with in great abundance."

CORN, RYE, AND INDIAN-BREAD.

We have been resolved into a committee for a special report on this very important branch of the great culinary art, and if our readers do not understand and act discreetly in reference to it hereafter, it is not our fault.

We profess to speak, in the following passages, *ex cathedra*, and if others do not succeed in their earlier experiments, they must try again:

CORN-BREAD AS MADE AT GREEN'S, CHAMBERS-ST., N. Y.

Take 7 pints yellow corn-meal, 3 pints wheat flour, and mix them well together; then 6 eggs, well broken, 2 cups melted butter, and a little salt and sugar to suit the taste. Put this mass together, and mix with milk to make a batter about the consistency or stiffness of paste prepared for drop-cake. Then dissolve three teaspoons-full of cream of tartar, and the same of soda; pour it upon the mass, stir it in thoroughly, and dip it at once into pans, and bake in a hot oven.

CORN-BREAD AS MADE AT CROOKS', CHATHAM-ST., N. Y.

Take 1 quart of milk, 3 eggs, beaten, butter half the size of an egg, cream tartar, 1 teaspoonful, salt and sweeten to your taste. To this add corn-meal to make a paste about the consistency of griddle-cakes; put in pan immediately, and bake in a hot oven.

BOSTON BROWN-BREAD.

To make this article, take of best yellow corn-meal two parts; of unbolted rye-meal (the rye should be screened before grinding) one part; partially wet and mix the corn-meal with hot water, then add the rye and the yeast, (hop-yeast, one pint to nine quarts of meal,) and thoroughly mix with more warm water, if necessary, to make a mass neither hard nor soft, but stiff enough to be transferred with care by the hand from the kneading-trough to the pan; then let it stand till it begins to show signs of rising; put it into the pans, and let it stand a few minutes if it is not "rising" too fast, then put it to bake; if in a brick oven, six hours will be none too many; if in a common stove or range, care must be had not to burn, and bake from three to six hours according to size of loaf. The heat should be moderate after the first two hours, but steady; keep up a scalding heat after the outside is browned properly.

Many people use three quarts or pounds of rye-meal to five quarts or pounds of corn-meal, which, we think, are the best proportions for pure, New-England "rye and indian." S. D. Ostrander, Boston brown-bread baker, of this city, 378 Bleecker street, uses 2 parts rye to 4 of corn-meal, and hop-yeast, adding a little molasses to a part to suit the taste of customers. Too much molasses is worse than none for most people.

But we next give the receipt which we would set forth as making a better article than all the brown-bread ever baked in the city of Boston, where, of course, bakers only imitate the "*real* original" article made by the housewives of Yankeeland. It will be perceived that we still hold on upon *milk*, and though a large proportion of this bread is mixed with water only, we go for this liquid as a valuable improvement.

REAL NEW-ENGLAND BROWN-BREAD.

Take equal proportions of sifted rye and Indian meal, mix them well together; add half a tea-cup-full of molasses, and two gills of good yeast, to about three quarts of the mixed meal. Wet this with good, new milk sufficient to make a dough that can easily be worked, even with one hand. For economy's sake, milk that has stood twelve hours, and from which the cream has been taken, may be a substitute for the new milk; or water which has been pressed from boiled squash, or in which squash has been boiled, is a substitute much better than pure water. But warm water is more commonly used. The ingredients should be thoroughly mixed, and stand, in cold weather, for twelve hours; in warm weather two hours may be sufficient before baking.

If baked in a brick oven, a three-quart loaf should stand in the oven all night. The same quantity in three baking-pans will bake in about three hours.

Serve this warm from the oven, with good, sweet butter, and we could *fast* upon it every morning for breakfast, from January to December.

STEREOSCOPES—MR. MASCHER'S PATENT.

We took occasion, last month, to notice the new form of stereoscopes, patented by Mr. Mascher, of Philadelphia, by means of which daguerreotyped persons are made to appear in a most wonderfully life-like form. We have since seen another form, designed for views of natural scenery. This is as neat and compact as those before described, being scarcely thicker than a common leather daguerreotype-case, and, perhaps, double the size of those for one-quarter pictures. The effects on representations of natural scenery are equally beautiful as in the case of the living form. Buildings, trees, hills, and other material objects, stand out in the boldness, and grandeur, and distinctness of reality. These pictures are photographic, and may be had either on paper or on glass. Those on paper are very fine. Among these we have seen are the Girard College, in Philadelphia, High Bridge, near New-York, the Capitol at Washington, part of the White House, Niagara Falls, the Suspension Bridge, Washington's Tomb, the Coliseum, etc. These are only $3 a dozen. Others are taken on glass, and are absolutely superb. The Capitol at Washington, for example, looms up before you in all its massive proportions, with all its ornamentations, its roughnesses, etc., like the real structure. These are $18 a dozen. Paper, on glass, so as to be transparent, at $6 a dozen, are very fine—nearly equal to the best. The stereoscopic case itself is only $2,50. Those who love elegant luxuries, and those who would patronize real genius, in these its most useful discoveries and inventions, should order, then, the most beautiful of all optical instruments. We wish our finances would allow us an entire set of those on glass. These have a fine effect in the evening, before a bright lamp, or gas-light. In using the paper photographs, the light should fall brightly on the picture.

Many of our readers may have seen similar results, in a less elegant form, by means of glass lenses in a large case, in connection with coarse engravings, or as they are arranged in Barnum's Museum, round the sides of the room. Those are either paintings or engravings. Saddler's cosmoramas, that are so

very beautiful, and excited so long and so widely the attention of citizens and strangers, in his rooms on Broadway, are produced by similar processes, though his pictures are vastly finer than those in the Museum. In this little case, which, with the series of pictures, a gentleman could carry in his coat-pocket, one may have a set of cosmoramas on his own parlor-table, and if he loves beauty, they will not lie there forgotten or uncared for. Every caller will be invited to look at them; and at a party, when material for conversation runs low, scandal being used up and worn threadbare, these little representations of the grand, or great, or beautiful scenes, made interesting by historic incident, or by a personal visit, in times gone by, will be regarded with peculiar satisfaction.

Do not forget Mr. John F. Mascher, 408 North Second street, Philadelphia.

A notion of this invention was given in the March number of *Silliman's Journal.*

We will order and forward to any subscriber who wishes them the style he may select.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

METEOROLOGICAL.

MESSRS. EDITORS:—I have seen some notices on the above subject in your periodical, and thinking a few remarks on the weather the last season might be interesting to some of the readers of your wide-furrowed Plow, I subjoin a few facts:

The summer of 1854 was extremely dry—a great and wide-spread dearth of all the products of the earth: the corn did not ear, the oats did not fill, and many fields were mowed for fodder; the grass did not seed, the hay was short of nourishment, and takes one-third more to winter the stock than usual.

Hay will command any price demanded—$20 per ton [$5 a usual price, we suppose.—EDS.] is paid, and cattle starving. All edibles for man or beast are scarce and dear. I have kept tables, and noted the range of the mercury in the thermometer for some twenty years. Once in this time, previous to the 6th last September, the mercury is recorded 100°; that day, 6th September, at 12 o'clock, the mercury rose to 104° above zero. Professor Z. Thompson, of Burlington, was at my study. I requested him to step out and look at it, which he did, and hung one he had with him by the side of mine; that soon rose to 104,° and both to 106° at 1 o'clock; barometer, 28,50.° About 4 o'clock, P. M., we had a shower with thunder and high wind, which prostrated many fruit-trees, fences, and some buildings.

The winter has been moderate for our high latitude, except a few cold days. The 20th December, the mercury fell to 35° below zero, as cold within one degree as it has been in this locality for twenty years. December 22d, the mercury stood at 26°; 23d, at 30° below zero; 25th, at sunrise, it stood at 34° above zero, and would range as high as 38° at sunrise occasionally. On the morning of the 6th of February, 1855, the mercury was 26°, noon, 18°, sunset, 24°; the most tedious day last winter—a stinging N. W. wind. Wednesday, the 7th, at sunrise, the mercury stood at 38° below zero—the coldest morning for twenty years, or since I kept a thermometer. In many localities in the state it stood at 40° below zero. The 9th of February, the

mercury rose to 11° above zero. April 2d, high, south wind, snow, and wind all day; and, until noon, the 3d, the roads were blocked up with snow worse than at any other time through the winter. Blue-birds made their appearance the 4th of April, and robins the 5th of April, 1854. Both birds were seen by me on the 6th. The Louisville river cleared of ice, last year, the 13th; this year, the 17th. Shower, with thunder, the 18th, at sunset. Plowing was commenced the 19th; last year, the 20th.

At this time, the weather is rather favorable—snow mostly gone on low lands; the mountains and hills mostly covered. Rain is needed to start the grass.

ARIEL HUNTON.

Hyde Park, April 22d, 1855.

NEW AMERICAN PATENTS.

MORRIS'S IMPROVED BUCKET FOR CHAIN-PUMPS.

THE annexed engravings illustrate an improvement in the bucket for the common chain-pump, patented by Edmund Morris, of Trenton, N. J., January 3, 1855. This bucket makes an entire change in the chain-pump, altering it from a mere lift-pump, which loses its water the moment you cease to turn the crank, into a suction pump, that retains the water, and which a single turn of the crank will cause to discharge at the nozzle. Its construction is extremely simple, while its cost is probably no more than the ordinary iron disk, as, no matter how deep the well, only two of these buckets are required to be in the log at the same time, while the iron disks occur every few inches. These numerous disks being dispensed with, the chain is, therefore, much lighter.

Fig. 1

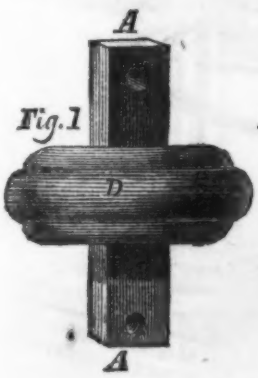


Fig. 2

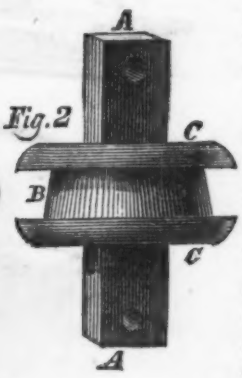


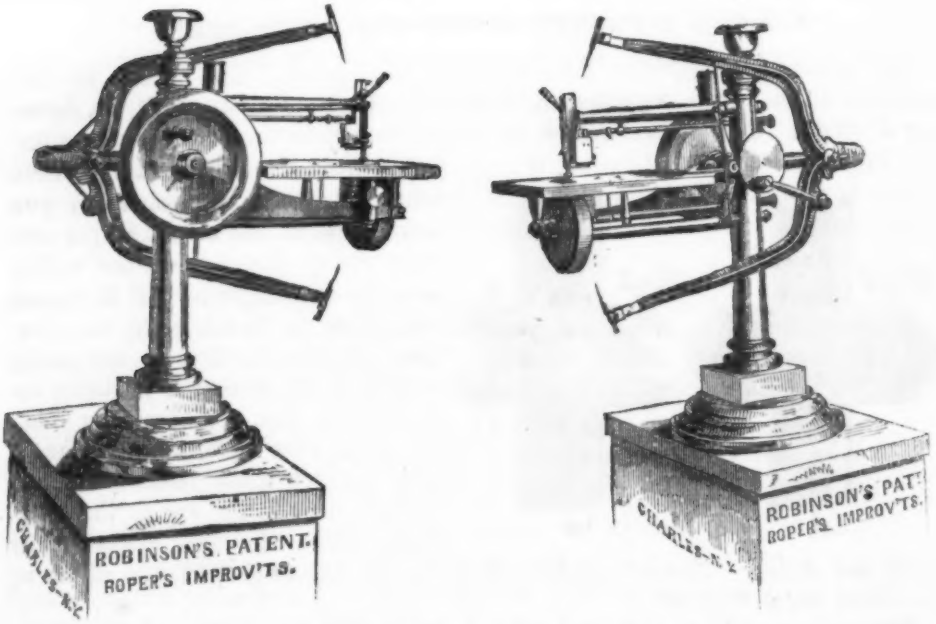
Figure 2 is an iron casting, having a shank at A, at each end, by which to rivet it to the chain. It is supplied with two flanches, C C, of equal diameter, and these flanches are connected by a cone, B. A ring (1½ inches in outside diameter) of india rubber, D, figure 1, is stretched over one of the flanches on to the cone, and fills up the space between them, or very nearly so, as seen in figure 1. This figure represents the bucket complete. It must be remembered that the inside of the flanches, where they join the cone, are hollowed out, so that the ring, when compressed by the passage up the pump log, can partially contract itself into this hollow space, from which it escapes as soon as the bucket emerges from the log, and recovers its original elasticity. The bucket also, when ascending the log, will force the ring down to the base or thickest part of the cone, thus causing a very trifling amount of expansion of its diameter, or just enough to make a perfect air-tight fit, and a consequent vacuum, like the piston of a syringe. As the upper bucket escapes from the log, another one should enter at the bottom. Water is the

lubricator for gum, as oil is for metal; there is, consequently, a very small amount of friction.

These buckets possess the merit of not wearing out the log, nor themselves. They will last many years, and should the rings, from any cause, require renewing, a new set can be put on in five minutes. All the old pumps now in use can have the old buckets replaced with these, the same gearing answering in both cases. The bucket which is to receive the ring can be cast at any country foundry, and the patentee can furnish the rings at a very small price. No change of weather affects the elasticity of the rings, as the gum is vulcanized expressly for the purpose. It would be difficult to construct a pump which works more accurately.

Particulars may be learned by addressing the patentee.

NEW SEWING-MACHINE.



We present our readers with a representation of a novelty in the line of sewing-machines. This is entirely different from those so widely known and so extensively used. The inventor is F. R. Robinson. It has since been in the hands of Howard & Davis, the well-known clock and gold-balance manufacturers, and in their establishment, under the supervision of S. R. Roper, a new needle and some other improvements have been added. The motion is all communicated by a cam on the shaft, to which is attached the balance-wheel, as shown in the cut. By the revolution of the cam, the two arms, diverging from a common axis, are elevated and depressed. At the extremity of each arm are placed the needles. The needles are a curiosity in themselves, being hollow, and in each is a piston. As the under arm comes up, a shoulder on the piston of that needle meets a stop; the needle then has passed through the cloth—the eye of the needle is opened by the stoppage of the piston, and then receives the thread; as the arm retires, the eye is

closed, and the thread is carried down through the cloth—the thread renders through the needle's eye loosely, and is left ready to be received by the upper needle in its descent, when it is again taken through the cloth in an upward direction by the ascending arm. Thus the thread is passed through and through the cloth, and the stitch is formed the same as by hand. The needles on the ends of the arms are adjustable (by a set-screw) from right to left, and *vice versa*, so that any size of stitch may be obtained that is desired, either a back or forward-stitch. In fact, any through-stitch that is taken by hand is produced on this machine; even the whip, or over-and-over-stitch. The sewing, by this invention, has no *under thread* by shuttle or spool. A single thread is only used. The sewing can not be distinguished from the best of hand production, except by its mechanical accuracy. By a very simple arrangement, any required degree of tension is obtained; and by the turning of a screw, the seam can be fastened off, just as by a woman, at the beginning and ending. This is the only machine which makes the same stich that is made by the seamstress with her needle.

As a specimen of ingenuity and workmanship, we think them well worthy of examination; and those who want the best work with the least labor had better look into them, and see for themselves.

The following is taken from the circular issued by the patentees:

"This new sewing-machine is respectfully recommended to public notice, and an examination of its work and merits solicited.

This machine actually SEWS, *threading its own needle*, and the *single* thread, passing *through* the cloth each time, forms the stitches *the same as by hand*, (without loop or chain,) but with that regularity, precision and rapidity, attainable *only* by machinery.

With very slight changes in the position of the needles, (by the turning of a screw,) each machine will produce *any* and *every* variety of THROUGH-STITCH that can be made by hand, and with any required degree of tension. The seam is *fastened* at each end as readily as in hand sewing.

It is applicable for sewing on any fabric; requires no special manufacture of silk or thread, the same kind and the same quantity being used as needed for the same stitch by hand, and no *ripping* or *unraveling* of the work.

The gain in the use of this machine over hand work is not less than SIX TIMES in *quantity;* while in *quality* it can not be approached.

They are manufactured with the greatest care and accuracy, very easily operated and understood, and can be used with less expense, and with less requirements for repairs, than any other machine now before the public.

TAILORS, CLOTHING DEALERS, HABIT and MANTILLA MAKERS, LADIES' BOOT and SHOE MANUFACTURERS, and all interested in obtaining the perfection of sewing by machinery, are particularly invited to examine this new and ingenious invention.

The advantage it possesses over all other machines, in the ability of *varying the stitch* according to the work required, will sufficiently recommend it as the BEST for FAMILY USE.

Ample printed directions and extra needles are sent with each machine, and they are securely packed for transportation to any part of the country.

They are all set up and ready for use as soon as taken from the box.

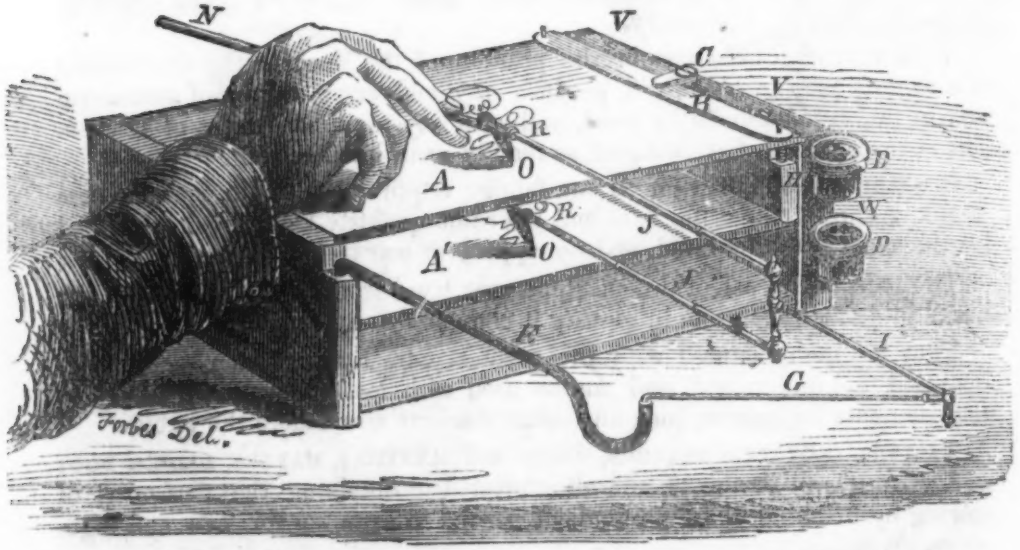
Price $150. Orders should state for what kinds of work they are desired, that suitable needles may be furnished."

AMES'S POLYGRAPH NEW WRITING MACHINE.

We have seen a machine, recently patented by Mr. Nathan Ames, a lawyer, of Saugus, Mass., the purpose of which is to write, at one and the same time, two copies of any document, and with about the same ease and rapidity with which a single one could be written in the usual manner. Any kind of paper may be used, which can be written upon by a common pen, and with the same ink that is used in the ordinary mode of writing. One is not an impression from the other, but both copies are alike, written by separate pens, and each one is a perfect fac-simile of the other, the hair lines, heavy strokes, &c., being the same in both; and both as much under the control of the writer, and exhibiting all the elegances of penmanship, as by the use of a steel or quill pen. If this is not an immense stride in useful inventions, applicable to common business affairs, we are very much in error. No lawyer who has contracts or bonds to write, of which duplicates are required, will be without one for a week, after he knows the *abilities* of this instrument. It would pay for itself in its first fifty pages.

Below, we present a diagram of this invention. A and A', in figure 1, are two parallel surfaces, either of the size of letter paper, or foolscap, or other desired form and dimensions, and about one inch and a half apart.

Fig. 1



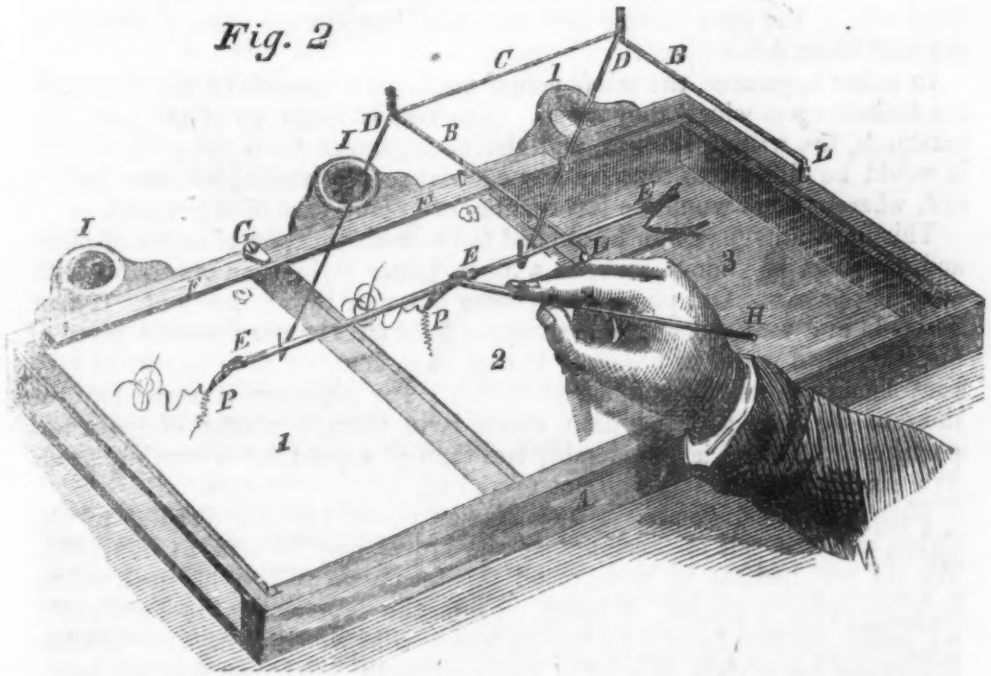
Between A' and the bottom of the machine is also a space of about an inch and a half. These plates may be of wood, metal, or glass. In the machines now in operation, plate glass is used, as it is perfectly smooth, uniform, and not liable to warp. They are kept in position by end and bottom pieces, (as represented in the engraving,) which may be of wood or any other material.

Into the right hand side of one of the end pieces, a rod, E, about nine inches long, and a quarter of an inch thick, and bent as represented in the engraving, is inserted, so that it swings horizontally and freely upon its point

of insertion. To the end of this is also hinged another smaller or lighter rod or wire, G, as represented in the engraving, which also swings horizontally upon its point of connection with the rod, E. To the end of the rod, G, is also hinged another rod, I, which, at a few inches from its point of connection with the rod, G, divides itself into two parallel prongs, J J, about an inch and a half apart. At the ends of these prongs, and at right angles with them, two pens, O O, are inserted. These are so adjusted as that their points are precisely the same distance apart as the upper surfaces of the two parallel plates. From the diagram, it is evident that each pen will have precisely the same motion. If, then, a sheet of paper be placed on each plate, the writing which is done upon the upper surface will be exactly reproduced upon the lower. The elasticity of the wires is such that the slightest pressure will bring the pens down upon the paper. By an arrangement of the inkstands, D D, upon one of the end pieces, both pens can be inked at the same time. To hold the paper firmly, a metal ferule or strap, B, is laid at one end, and held by slight springs at the ends, a little above the plate. The paper being placed beneath, the bar is pressed down upon it, and held fast by the button, C. The lower sheet is held in like manner by a wooden bar, H, which, by means of rods and spiral springs, is pushed down simultaneously with the upper strap, B. The whole arrangement and operation will be comprehended at a glance.

The pens are inserted through a split in the ends of the prongs, R R, and held fast by little rings or collars on the prongs. They can be changed or adjusted in a moment. Any pens will answer, but fountain pens are preferable, on account of the greater quantity of ink they hold. The pen handle is secured to the upper prong by two loops of wire, forming a universal joint, (in mechanical effect exactly like the ball and socket joint.)

Fig. 2



It is obvious that by increasing the number of prongs, and the number of writing surfaces, the number of copies can be increased at will.

Figure 2 represents an apparatus in which the writing is all done upon the

same surface, instead of being done upon parallel surfaces. Small wires' B B, bent at right angles at the ends, L L, and there inserted into the writing surface or bed plate, so as to swing freely in their sockets, are also bent in the opposite direction, and at right angles at the other ends. These other extremities are connected together by a wire, C, the same length as the distance between the points, L L. To these extremities also are hinged two other wires, D D, which, at their further ends, are also bent upwards at right angles, as represented in the engraving. These upward bends of the wires are passed through small holes in a light hollow steel rod, E E E. To this rod are attached the pens, P P, in the same manner as described in figure 1. All these wires swing horizontally with the greatest ease, and with no perceptible friction. The wires, B B and D D, may be about six or nine inches in length, according to the size of the machine; the rod, E E E, of any length required. The pens must be as far apart as the width of the sheets to be written on. The pen handle is attached to the bar in the same manner as in figure 1.

When not being written with, the spring of the wires, D D, will lift the points of the pens a little above the surface upon which the paper is placed. The slightest pressure brings them down upon the paper. The same arrangement for holding the paper is used as in figure 1. The inkstands, I I, are the same distance apart as the pens, which will thus be inked simultaneously. From the engraving, it will be seen that a third pen might be inserted at the right hand of the bar, E E E, so as to make three copies at once. This is entirely practicable; but usually, two copies are sufficient; and instead of a third pen, a small screw rod there, is found to be useful in regulating the pens, so as to insure their always touching the paper together. In this machine, as in the other, a writing surface of plate glass is found to be the best. With both, one of the copies can be taken in a book, by inserting the right hand side of the open volume into the space beneath the glass, and turning the next sheet down upon it.

In either apparatus, the *whole actual mechanism* consists of the wires and the sockets upon which they swing. The rest is made up of the pens, the inkstands, the writing surfaces, and the arrangement for copying in a book. It would be difficult to conceive any contrivance to accomplish the desired end, wherein there would be less friction, or greater ease of movement.

This apparatus may also be applied to the multiplication of copies of plans and drawings of various sorts, in a much better style than is possible with coppying-presses. Old plans, nearly worn out, may thus be renewed. It may be made in a very economical manner, or finished as an ornamental piece of furniture for a parlor or library. It may be so compact as to be carried very conveniently in one's trunk, as he travels. For reporters it saves half, or more of the labor and the time, which is to them a matter of great importance. The cost is considerably less than of a good letter-copying press. We should judge that it can not exceed ten to fifteen dollars.

Harvey Brown, Esq., No. 121 Nassau street, has the disposal of the rights, and the sale of machines, or the orders may be sent to this office. We do not hesitate to recommend this invention as one of great value. It is not liable to get out of order. From the experiments we have made, we prefer the first form. Perhaps a longer trial would change our opinion. It occupies less surface on a table, but perhaps the lower pen does not so exactly exhibit the variations of pressure applied by the hand, to the upper, as we witness in the use of the second form.

PRINCE'S PROTEAN FOUNTAIN PEN, PATENTED 1855.—We are now writing with an instrument bearing this appellation. It is a capital invention. We do not know, from experiment, how long it can be used without being "dipped into the ink," and probably may not acquire such knowledge very soon. We have, thus far, in fact, written only three or four pages of letter sheet, at one sitting; but we are told that this pattern will write "six hours" without replenishing the ink. It will write long enough, at any rate, and for aught we can discover, it works admirably. We have been among the faithless in respect to such an invention, but must confess ourself highly gratified, so far, with its action. The contrivance for regulating the flow of ink is very simple and very ingenious. A well finished gold pen is applied to the handle, which, being hollow, is the fountain, and is of a material (Goodyear's Patent) not acted upon unfavorably by the ink. It requires a "fluid" free from sediment; and with this proviso, any of the various inks may be used with it. The electric spring of the pen, in writing, acts upon a metallic spring, which causes a greater or less rapid flow of the ink. Hence, this flow is proportioned according to the quantity required by the style of the hand employed. The common size costs $3. Office, 8 Appleton's Buildings, 348 Broadway.

OIL-SOCKET AND SCREW-PLUG.—Alfred C. Garratt, M. D., of Hanover, Mass., has recently invented an oil-socket and screw-plug for lubricating carriage-wheels, which is highly spoken of. By means of this simple apparatus, inserted in the hub of any carriage, cart or artillery, the axle can be cleaned and oiled without removing the wheel.

Dr. Garratt has secured a patent for his invention for this country and Europe. He is now negotiating with our government to have it applied to artillery and all public vehicles.

It is stated that by means of this apparatus, the wheels of the heaviest ordnance, by land or on ship-board, could be oiled, without the labor of removing them, and also with the saving, in all cases, of oil now wasted when poured upon the naked axle.

NEW ENGLISH PATENTS.

INGRAM'S CAST-STEEL RIFLE BARRELS AND BULLET MOULDS.

THE use of round shot is altogether a delusion. It is, indeed, such a gross misconception, as could never have arisen but for an excess of apathy and inattention to the subject, and its very obvious requirements. The spherical form of projectiles presents difficulties and defects throughout both the manufacture and use of the shot. Spheres are by no means nice things to cast. The greatest care of the moulder will not always insure accuracy of shape, as the conditions necessary for a successful reproduction of the pattern's contour are wholly wanting. Then, when the naked shot is fired from the gun, whatever irregularities there may be in its form exercise a most powerfully-deranging influence upon the aim. And even if the shot were truly spherical, it does not follow that a true, even traverse would be obtained, as the explosive action does not necessarily give a perfectly central driving pressure. Hence, in addition to the severe battering of the gun's bore, we have the

total derangement of the aim which ensues from the last rebound of the shot at the muzzle.

The cylindro-conoid obviates all this. It is easy to cast with accuracy, and its elongated form affords it a good guide along the bore, rendering it independent of all irregularities of shape, and any side action of the explosion. The substitution of the cylindro-conoid for the sphere has the additional advantage, that it provides an easy means of getting at the proper weight for a given size of shot. The regulations of the Ordnance as to the weight of their spherical shot are excessively stringent, so much so, that few founders can meet their requirements. Now, it is obvious that the sphere, being a form with which no liberties can be taken, the adjustment of the shot's weight must be through the specific gravity of the iron alone; and as the density of the metal varies, to some extent, in every locality, difficulties on this point will always be oppressive. But whatever form we choose for the shot, we must resort to clothing, both as a protection for the bore, and a means of increasing the accuracy of the flight, and the effective length of range. This clothing is possible under various forms. A cup-piece of leather or cheap pasteboard may be pasted upon one end of the shot for this purpose. If at the rear end of the shot this cup-piece, which would also be a wadding, would leave the shot on quitting the muzzle, so as to offer no impediment to the flight. If at the front end, provision must be made for the easy separation of the clothing-cap; and this may be done by dividing the cup-piece into sections, which are merely held together by some slight tie, or connection, sufficient to retain the cap in form until the gun is charged. When the shot emerges from the muzzle, the pieces of the cap separate and fly off.

Mr. Kennedy, who intends to adopt some such contrivance as this, has been most successful in making effective shot on his "guide-winged" principle. A shot of this kind, made lately at Kilmarnock, to fit a 10-inch gun, is 30 inches long from base to apex, and it weighs 314 pounds. The thickness of the metallic shell is 1½ inch, and it is bored out to a length of 24 inches, the remaining 6 inches of the conoidal part being solid. The guide or rifle-wings are angled, or inclined, to the shot's axis, to a sufficient extent, to give one turn in 50 feet of flight. This extent of rifle action is ample for the purpose; most rifle-makers have erred by giving too much turn, to the great increase of the atmospheric resistance.

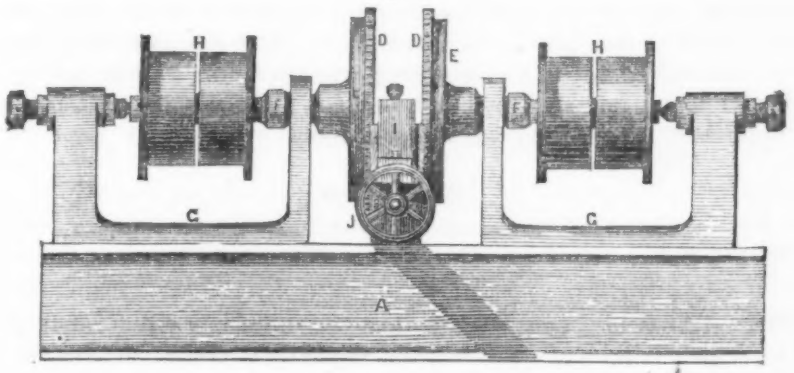
SLATER AND TALL'S WOOD-WORKING MACHINERY.

Mr. Thomas Slater, the optician, well known for his valuable inventions in connection with the mechanical arrangements of the electric light, and Mr. Joseph Tall, a tool-maker of acknowledged ability, have recently combined their endeavors for the improvement of the wood-worker's tools, with the most satisfactory result. The particular subject which they have taken in hand is the manufacture of joiners' and carpenters' planes, by the aid of set machinery, in such way that peculiar accuracy in the work is secured, in conjunction with great rapidity of production.

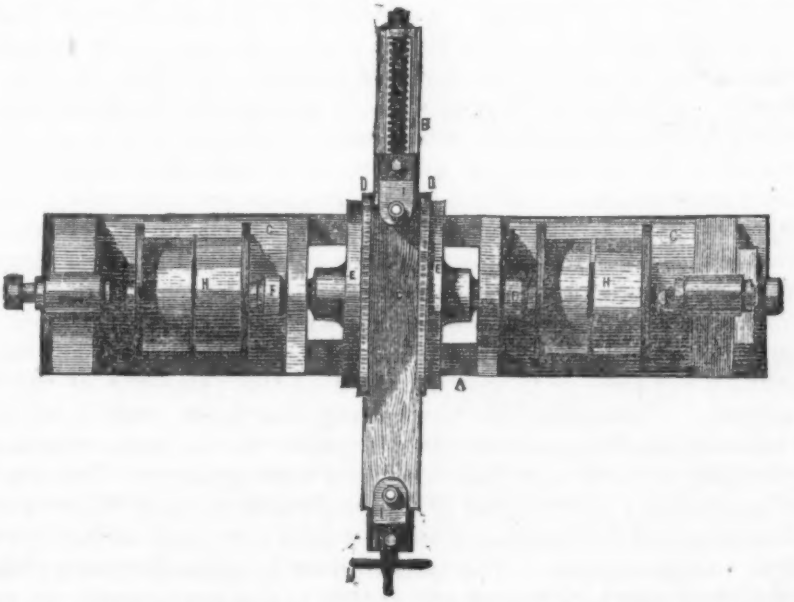
Messrs. Slater and Tall's invention comprehends, firstly, an arrangement of machinery for cutting the parallel sides of the blocks out of which the planes are to be formed; and, secondly, machinery for mortising the angular cavity into which the plane iron is fitted.

Fig. 1 of our engravings is a side elevation, and fig. 2 is a plan of the machine for cutting the parallel sides of the blocks out of which the planes are to be formed.

Fig. 1.



The working parts of this machine are supported by the cast-iron bed, A, similar to an ordinary lathe-bed, and upon this bed is situated the transverse slide-rest, B, which carries the rough blank, C, between the two revolving circular cutters, D. These cutters are composed of a number of steel segments, with serrated or toothed edges, bolted on to metal discs, E. The edges of the cutters next the block are slightly dished, or inclined inwards, for the purpose of forming a smooth cut, free from marks. The holding discs, E, are screwed, or otherwise secured upon the ends of the respective spindles, F, which work on the headstocks, G, standing up from the bed, A. These spindles may be driven by belts, and are fitted with suitable fast and loose driving-pulleys. The block, C, out of which the plane is to be made, is secured firmly upon the slide-rest by the screw-clamps or brackets, I, and is traversed forward between and against the two circular cutters by turning the hand-wheel, J, on



the front end of the horizontal screw spindle, K, which spindle revolves in collar bearings at each end of the slide-rest frame. The distance between the cutters is varied according to circumstances, by adjusting the headstocks

on the bed, A, in the manner adopted in ordinary lathes. The sides of the block having thus been cut perfectly smooth and parallel, it is taken out of the clamps, and turned so as to present the other two uncut sides to the action of the cutters, the slide-rest in the meantime having been brought back again to its original position, in readiness for the second traverse of the block. The four sides of the block having thus been cut perfectly smooth and parallel, it may be removed to one of the mortising machines, for the purpose of having the angular cavity for the iron cut therein. These circular cutters are obviously applicable for grooving moulding-planes.

THISTLE PAPER. LORD BERRIEDALE, London. Patent dated July 8, 1854.—Whilst India and other tropical regions have been traversed in search of a plant to be used in place of rags in the paper manufacture, Lord Berriedale has turned his attention nearer home, and has selected the common thistle as the most suitable plant for his purpose. His invention relates to the application and use of the common thistle, or *Carduus*, as it is termed, according to the botanical classification of Linnæus, in the manufacture or production of pulpy material from which paper is to be made, as well as in the manufacture of a fibrous material for textile purposes. All the varieties of the thistle plant are applicable for the purposes of this invention, but more particularly the large Scottish thistle, which grows luxuriantly in many parts of the British islands, attaining a great height and thickness of stem. Such thistles furnish, in each plant, a large amount of long fibre of great tenacity, and which, when duly prepared, is most excellently suited for the preparation of a powerfully cohering paper pulp, as well as for use in textile manufactures.

In adapting the thistle to the manufacture of paper pulp, the plant is used either in a green or dried state. If employed in its natural green condition, it is cut or gathered, and at once beaten or broken up by any suitable mechanism, such as is used in the primary treatment of the flax plant, so as to disintegrate the fibrous or ligneous matter. During this breaking treatment, the mucilaginous and aqueous matter present is washed clear away, either by pure water, or by an acidulous solution, or by any other economical and effective cleansing agent. When the thistle stems are thus fully reduced or disintegrated, the resultant fibrous mass is worked up or macerated in the usual manner, for the production of a pulp suitable for the use of the paper-maker. This pulp may be used in the manufacture of paper, either unmixed, or commingled with other materials already in use for making paper. The routine of manufacture into paper of the pulp is similar to that pursued with the ordinary rag pulp, or it may be varied as the properties of the thistle may suggest. The thistle fibre being strong, the paper made from it is of great tenacity, the fibres cohering well together in the paper machine, and being worked up with very little loss from washing away. The fibres are also of good color; hence, paper of a fair color may be made from them without bleaching, and if bleaching is resorted to, a very good white color is obtained at a slight expense. The mucilaginous or gummy matter dislodged from the fibres may be collected and applied in the manufacture of gum or glutinous matter, or it may be otherwise rendered commercially valuable, so as still further to economise the thistle manufacture. In applying the thistle plant to the manufacture of textile materials, the fibres are primarily pre-

pared in the manner already described, and then subsequently treated according to the existing textile processes—such, for instance, as are adopted in the flax manufacture, the thistle fibre being closely allied to the fibre from the flax plant, as regards its general characteristics. Being strong and of good staple, the thistle fibre is particularly well suited for the spinning and weaving processes.

MISCELLANY.

HURD'S HAIR RESTORER!—Judging from the numerous certificates of well-known persons, attesting the efficacy of this article in not only keeping the head clean, and preventing the hair falling off, but in actually producing a new growth of hair on bald heads—even in some cases after several years of baldness, we can but believe that it possesses restorative properties scarcely found elsewhere, and think that persons wishing to preserve their hair, or produce a new growth, would look in vain for a better article for that purpose.

WHY DO TEETH DECAY?—In a short paragraph on this subject, our friends of the *Scientific American* say: "It is our opinion that if more coarse, *hard* biscuit were eaten in early life, to exercise the teeth, they would be less liable to early decay." We think so too, beause such an application of force would eject them from their sockets before they had "much of a chance" to "decay." But the idea of *exercising* teeth is as novel to us as would be the exercise of toe and finger nails. We don't think that is quite up to the proper standard of a "scientific" oracle.

OZIER WILLOW.—The first person who attempted to cultivate this profitable crop, systematically and successfully, in this country, it is said, is Mr. John Reed, of Staten Island. At this time, Dr. C. W. Grant, of Newburgh, N. Y., is, perhaps, the most extensive cultivator. He grows nearly a hundred varieties.

GEORGIA MARBLE.—Two specimens of marble—one of beautiful white color, almost translucent, of a very fine grain, and susceptible of very high polish; the other variegated, and exceedingly beautiful—have been discovered in Cassville, Georgia.

NEW BOOKS.

WESTWARD, HO! THE VOYAGES AND ADVENTURES OF SIR AMYAS LEIGH KNIGHT. By CHARLES KINGSLEY. Boston: Ticknor & Fields, 1855.

Kingsley, who is the author of "Alton Locke," &c., has here opened a new vein for himself, to the working of which he has bronght all the skill he has manifested on other occasions. It is, so far as we know, a vein untouched by any other hand. It brings before us the country life of the middling classes in England, in the age of Elizabeth, when the knight-errantry of the past was dying away, or rather was breathing its own spirit of daring and adventure into the more practical life which was dawning upon mankind. We are introduced here to Raleigh, not as the courtier, but as the general and voyager, to Edmund Spencer, Drake, Frobisher, Hawkins, and many others whose names the world will not willingly let die. The scene changes from England to the wilds of South America, with an interlude in Ireland, and after adventures, many and wonderful, closes with the events attending the destruction of the Spanish Armada—a grand finale. The least successful part of the work is the love-story, which, of course, accompanies the grander acts, yet this, too, is not without interest.

THE COMPLETE WORKS OF SHAKSPEARE, including his Plays, Poems, and Life, from the Original Text, carefully collated and compared with the editions of Knight, Hallowell, and Collier. With Historical Introductions and Notes, explanatory and critical. Illustrated, &c. Published by Martin & Johnson, 91 Walker-st, N. Y.

A new edition of Shakspeare may, to some of our readers, appear unnecessary; but we think otherwise, and for several reasons. Among these reasons are the fact that every new edition probably multiplies his readers; and another, still more important, which is applicable not to all, but to this, we have as yet no elegant American edition of this great writer. Shakspeares, indeed, we have, in one volume, with type to ruin thousands of eyes, and in more than one, in which the defects are only the more conspicuous. This edition is in quarto form, and it is an elegant edition. The whole execution is elegant, whether paper, or printing, or engravings. There will be about forty numbers, each 25 cents, and each having a handsome illustration.

No. 1 has an engraved title-page, and an elegant portrait of Shakspeare, surrounded by scenes and characters illustrating his plays. In the 2d, is a full-length portrait of Forrest as "Hamlet," a good likeness. In the 3d, a scene from "Much Ado About Nothing." In the 4th, likenesses of Charlotte and Susan Cushman, as in "Romeo and Juliet," Act. 3, Scene 5. In the 5th Anne Page and Slender, &c. The engravings are executed in a very superior manner, and the publishers deserve an extensive patronage. Specimen numbers will be sent to order, if 31 cents and postage is enclosed to us or the publishers.

PRACTICAL LANDSCAPE GARDENING, with Reference to the Improvement of Rural Residences, giving the General Principles of the Art, with full Directions for Planting Shade Trees, Shrubbery, and Flowers, and Laying Out Grounds. By G. M. KERN. Cincinnati: Moore, Wilstach, Keys & Co., 1855. 328 pp. Price, $1,50.

The title of this book explains its purpose, and that purpose is ably and fully carried out. The first part is an exposition of the theory and practical operations of landscape gardening as an art of design and taste. The second explains its adaptation to pleasure grounds, the farm, cemeteries, etc. Directions for the kitchen garden are added. Twenty-two illustrations are given. Mr. Kern shows that his superior advantages for acquiring a thorough knowledge of this subject have not been neglected. This volume is full, thorough, judicious, and well worthy the notice of all owners of rural dwellings. It is for sale by C. M. Saxton.

DE BOW'S REVIEW FOR APRIL.—This number contains the usual amount of current information, under the heads of "Literary and Miscellaneous," "Agriculture and Horticulture," "Home and Foreign Commerce," "Mining, Manufactures, and Internal Improvements," and "Education." Among the articles are "The South and the Union;" "Practical Effects of Emancipation," by D. J. McCord, of South Carolina; "Selection of Seed in Agriculture," by J. W. Scott, of Ohio; "Public Debts and Securities;" "Sugar Trade of the United States;" "Southern Convention of New Orleans;" "Common Schools and Universities, North and South," &c., &c. The editor is again devoting his entire energies to the work, and urges prompt remittances from subscribers, as well as an increase of their number. He can supply the back numbers of any series from the beginning, or a digest of the whole work, in three octavo volumes, for $6, postage free. Address, New-Orleans and Washington City. It is a favorable season to subscribe.

PUTNAM'S MONTHLY.—This popular magazine is now published by Messrs. Dix & Edward, who have become the proprietors, with a new editorial department. A card from Mr. Putnam assures us that "in all departments of elegant literature, criticism, popular instruction and amusement, the new management has already secured the promise of most hearty co-operation from the best writers;" and he adds—"We have no hesitation in assuring the readers and contributors of the magazine, that they may rely with entire confidence upon the future character of the work, and that the only change will be for the better. It will continue to have our own active co-operation, and all orders for the trade will be supplied by us as heretofore." Office, as before 10 Park Place.

MERRIE ENGLAND. Travels, Descriptions, Tales, and Historial Sketches. By GRACE GREENWOOD. Twelve Illustrations by Devereux, and Vignette. Boston: Ticknor & Fields, 1855. 261 pp.

Grace Greenwood needs no commendation from us. This handsome volume is honorable to the publishers, and is worthy the eminent author. The selection of topics is excellent. These are, Stratford upon the Avon, Newstead Abbey, Sherwood Forest, Nottingham Castle, Warwick Castle, Lincoln Cathedral, and York Minster; Kenilworth Castle, London and the Tower, Westminster Abbey, and the new Palace of Westminster. Under the Tower, we have Ladies Jane and Catherine Grey and Arabella Stuart.

THE FLOWER GARDEN; or, Breck's Book of Flowers. By JOSEPH BRECK. Second thousand. Boston: John P. Jewett & Co., 1851.

Mr. Breck is a gentleman of education and large experience. He formerly edited the New-England Farmer, and the Horticultural Register. He is, also, and for many years has been, one of the prominent members and an officer of the Massachusetts Horticultural Society. We regard his opinions as worthy of especial attention, while his years of careful observation and constant practice entitle him to the respect of the wisest and most successful. We commend this book especially to those for whom it was more especially designed, the amateur and the unpractised.

THE PRACTICAL FRUIT, FLOWER, AND VEGETABLE GARDENER'S COMPANION, with a Calendar. By PATRICK NEILL, L. L. D., F. R. S. E, etc.; adapted to the United States from the Fourth Edition. Revised and improved by the Author. Edited by G. Emerson, M. D., Editor of Johnson's Farmers' Encyclopedia. With Notes and Additions, by R. G. Pardee; with elegant Illustrations. New-York: C. M. Saxton & Co., 1855. 402 pp.

This is a good book, with well executed engravings. We have not had time for a thorough examination, but a partial reading has given us a very favorable opinion of its merits. We shall notice it further hereafter.

THE AMERICAN FRUIT BOOK. By S. W. COLE. Boston: John P. Jewett & Co., 1854. Twentieth thousand.

This little manual, of 288 pages, contains *multum in parvo*—viz: directions for raising, propagating, and managing fruit-trees, shrubs and plants, and a description of the best varieties of fruit, with numerous engravings. On these subjects, Mr. Cole was excellent authority, and he condensed into this little volume the results of many years' experiments and observation. Its extensive sale shows the estimation in which it is properly held by the public.

SABBATH MORNING READINGS ON THE OLD TESTAMENT. By Rev. JOHN CUMMING, D. D., F. R. S. E., etc. THE BOOK OF LEVITICUS. Boston: John P. Jewett & Co., 1855. 347 pp.

The works of this eminent author, who has no equal in this department, have passed more than once under our notice, and with our unqualified approbation. This volume is worthy of the previous issues. No work within our knowledge can take the place occupied by this series.

THE DAILY LIFE; or, Precepts and Prescriptions for Christian Living. By Rev JOHN CUMMING, ETC. John P. Jewett & Co., Boston. 279 pp.

This volume, by the author of the preceding, is intended for "those who are busy by day, and very weary at eventide,"—a very numerous class,—for whom "we require, not arid dogmas, however orthodox, but warm joys, sustaining strength, cheering hopes, and inspiring expectations; we need, also, direction, guidance, encouragement." How well this idea is carried out, those familiar with this learned author need not be informed.

THE PRACTICAL LAND-DRAINER; a Treatise on Draining Land, etc. Numerously Illustrated. By J. MUNN, Landscape Gardener. New-York: C. M. Saxton & Co., 1855. 186 pp.

This is a good treatise on a most important subject. Mr. Munn is well versed in this department, and has produced a book worthy of general attention. The directions are full and generally judicious, and quite sufficient as a guide to any farmer. Our readers may notice other references to this volume in this or in future numbers.

THE DAILY MONITOR; being a portion of the Scripture, an Anecdote, and a Verse of a Hymn, for every day of the year. By Rev. JOHN ALLEN. With an Introduction, by Rev. E. N. Kirk. Boston: John P. Jewett & Co., 1855. 219 pp.

This little volume is handsomely printed, and the plan is well carried out. The introduction, of only five pages, is worth the price of the book.

All these publications of Jewett and Co. are in the usual excellent style of that efficient house.

A BOY'S ADVENTURES IN THE WILDS OF AUSTRALIA; or, Herbert's Note Book. By WILLIAM HOWITT. With Illustrations. Boston: Ticknor & Fields, 1855. 359 pp.

Our young author says, on his first page, "things are very fond of flying in this country, The squirrels fly; the grasshoppers fly; the mice fly; and I see all sorts of seeds flying at a great rate. I shall, therefore, let my thoughts and observations fly on paper to old England, for it is an old proverb that 'at Rome you must do as the Romans do.'" This light, pleasant style is characteristic of the volume.

NEW MUSIC.

HORACE WATERS, 333 Broadway, whose advertisement of Pianos, &c., has been published in this journal, continues his publications of music as usual. Among the latest are "Light and Shade," by Oscar Comettant, "Le Trefle Waltz, Polka, and Schottish;" and among the vocal pieces, "The Fireman's Heart is Bold and Free," a very taking song; "Twilight is Chasing the Last Beams of Day," simple and pretty; "One Day Out," a sea song; "Mary's Beauty," "Our Boys," &c.

WM. HALL & SON issue among their new pieces, "The Miner's Tribute Waltz," by J. A. Fowler; "Rigoletto," Opera de Verdi; ballad, "La Donna e Mobile," by W. V. Wallace; and among the vocal pieces, "Music Murmurings in the Trees," by Wallace, adapted by Jarvis, song and quartette, very beautiful, 25 cents; "Hazel Dell," by Wurtzel, with variations by Wm. Iucho, rather difficult, but very good; "The Wild Tiadatton," ballad, by Chas. Jarvis, very pretty and simple.

List of Patents Issued

FROM FEB. 27, TO APRIL 3, 1855.

Geo. C. Allen, of Key West, for improvement in machines for cleaning sisal hemp and stripping seed from broom corn.

John Allen, of New-York, for improvement in life boats.

J. J. Anderson, of Beaver, Penn., for improvement in cook stoves.

Harmon W. Ballard, of Burlington, Vt., for improvement in springs for wagons.

Wm. Ballauf, and Fred. Wurth, of Cincinnati, for improvement in guards for door locks.

E. C. Benyard, of Philadelphia, for safe catch for breast-pins, &c.

Nehemiah B. Chase, and Chauncey W. Saunders, of Wilkinsonville, Mass., for improvement in hand cultivators.

Charles Crum, of Hudson, for improvement in processes for making bread.

Bene Charles Demolon, and George Alexander Charles Thurmeyssen, of Paris, France, for improvement in treating fish for manure and oil.

Julius C. Dickey, of Saratoga Springs, for improvement in harness saddle-trees.

F. A. Gleason, of Rome, N. Y., for machine for cutting mitre and other joints.

Robert B. Gorsuch, of N. Y., for direct double-acting hydraulic steam pump.

Guy H. Hubbard, of Shelburne Falls, Mass., for improved auger handle fastening.

Marcus F. Hyde, of Burlington, N. J., for improvement in soda water apparatus.

Geo. Martz, of Pottsville, for improvement in coal screen.

Sam. W. Powell, of Tuscarora Valley, Penn., for improved mill for grinding and bolting sumac.

Jesse Reed, of Marshfield, Mass., for improvements in steering apparatus.

Newton D. Robins, of Edinburgh, Ind., for improvement in the combination of an air chamber water cooler and force pump in soda fountains.

Edward Rice, of Canandaigua, for improvement in railroad car coupling.

John W. Smith, and John S. Gallagher, Jr., of Washington, for improved fire-place.

John Stainthorp, of Buffalo, for improvement in machines for making candles.

Linus Stewart, of Washington, D. C., for improvement in the mode of constructing saw plates and setting teeth therein.

Wm. L. Whittaker, of Cumberland, Maryland, for improvement in machines for stuffing horse collars.

John Williams, for improved arrangement of exhaust pipes in locomotive engines.

William W. Willis, of Orange, Mass., for improved mode of extracting stumps.

Virgil Woodcock, of Swanzey, New-Hampshire, for improvement in the arrangement of desks in school-rooms.

Dexter H. Chamberlain, of West Roxbury, assignor to Henry Woodward, of Boston, Mass, for improvement in apparatus for purifying illuminating gas.

John H. Manney, of Rockford, Ill, and Henry Marcellus, of Amsterdam, N. Y., for improvements in grain and grass harvesters.

Wm. E. Arnold, Rochester, improved sash fastener.

Theophilus A. Ashburner, Philadelphia, improvement in bottle stopper fastenings.

James M. Botturn, New-York, for polishing apparatus for watchmakers' lathes.

Alanson Brown, Rochester, improvement in machines for turning, boring, and slotting metals.

Ze Butt, of Lincolnton, North Carolina, improvment in self-loading carts.

C. M. Eakin, West Philadelphia, improvement in excluding dirt from grooved railroad rails.

Ebner Foster, Fairton, N. , improvement in hoop jacks for sailing vessels.

Niblo T. Greene, Bridgeport, Conn., improvement in cut of valves for steam engines.

H. Ludington and S. R. Supton, Addison, Pa., imrovement in seed planters.

J. W. Heard, Providence, improvement in gas regulators.

Joseph Hyde, New-York, improvement in screw wrenches.

Louis Koch, New-York, for machines for making paper boxes.

Geo. Leach, Oswego, improved grain cleaner.

Wm. W. Guiwits, Rodgersville, N. Y., improvement in sleighs.

Robert C. Mauck, Harrisonburg, P ., improved ditching machine.

Andrew Mayer, Philadelphia, improved valves for gas burners.

Jas. McCracken, Bloomfield, N. Y., improved evaporating apparatus.

Hiram Moore, Charleston, Mich , for method of operating pumps by wind.

Elijah Morgan, Morgantown, Va., improvement in washing machines.

Edw. F. Overdeer, Chattanoga, Tenn., improvement in fire-extinguishing compositions.

Frederick C. Rider, Providence, improvement in lamps.

Jesse Russell, Elkton, Ky., improvement in brick-kilns.

Christopher Walter, Bridgeport, improvements in ordnance.

Henry Lawrence, New-York, improved safety ferry bridge.

Frederick W. Urann, of Saxonville, Mass., improvement in curtain rollers.

Edward Vaughn, Alliance, O., improvement in stump machines.

Wm. Warwick, Birmingham, Pa., improvement in door locks.

Geo. W. Wheatly, Harrodsburg, Ky., improvement in eaves gutters for houses.

Rollin White, Hartford, improvement in breach-loading fire-arms.

John C. Schooley, Cincinnati, improvement in process of curing meats.

Jas. Smith, Mendon, N. Y., improvement in the manufacture of stone paste boards.

Fred. S. Stoddard, Litchfield, Conn., improvement in machinery for spinning wool.

James H Sutton, Honesdale, Pa., improvement in air heating furnace.

Isaac P. Trimble, Livingston, N. Y., improved apparatus for operating ventilators.

Chas. Cunningham, Nashua, assignor to John C. Pedrick, Boston, improvement in benzole vapor apparatus.

Samuel A. Knox, Worcester, assignor to Ruggles, Nourse, Mason & Co., of same place, improvement in cultivators.

Abel Barker, Honesdale, Pa., for improved rotary pump.

C. F. Bauersfeld, Cincinnati, Ohio, for clamp and mouth-piece for lumber-jointing machine.

E. A. Bigelow, Chickopee, Mass., new mode of preparing woolen roving; same, improvement in spinning wool.

Ransom Cook, Shelburne Falls, Mass., improved machines for turning the lips of augers.

Andrew Dietz and Y. G. Dunham, of Raritan, N. J , improved grass and grain harvesters. Antedated January 2d, 1855.

Levi. B. Darling, Providence, R. I., improved processes for refining jewelers' scraps.

W. R. Elliot, Plattsburgh, N. Y., combination of speed and resistance governors.

L. W. Ferris, Owego, N. Y , for improvement in chairs.

H. A. Frost, Worcester, Mass., improved mode of supporting table leaves.

H. D. Ganse, Freehold, N. J., improved cultivator.

L. D. Gilman, Troy, N. Y., improved screw wrenches.

Warner Groat, Troy, N. Y., mode of packing journal boxes.

W. H. Guild and W. F. Garrison, Brooklyn, N. Y., improvement in operating valves in direct-acting steam engines.

David S. Harris, Coventry, R. I., improvement in looms.

R. G. Holmes and W. H. Butler, New-York, f r a new fire-proof filling for safes.

Thaddeus Hyatt, N. Y. city for illuminating vault covers.

Wm. S. Irish, Middlebury, Ohio., improvement in looms.

Y. S. Kirk and W. H. Elliott, Plattsburgh, N.Y., improved grate bar.

Urias Kimble, Penfield, N. Y., improved tool for boring hubs to receive boxes.

S. B. Knight, North Providence, R. I., improved method of chalking lines.

Charles Leavitt, Quincy, Ill., improved shingle machine.

Thos. Ling, Shelby, Ohio, a self-adjustable or anchoring pump.

John McNeill, N. Y. city, improved charcoal furnace.

Hiram Moore, Climax, Mich., improved seed planter.

G. W. Palmer, Boston, Mass., improved bill holder.

David Sholl, Cincinnati, improved coffins.

W. S. Smith, Cedar Rapids, Iowa, improvemrnt in current wheels

H. G. Tyer and John Helm, New-Brunswick, N. J., improvement in the manufacture of boots and shoes.

M. Ward, Owego, N. Y., for improved seed planter.

R. P. Vanhorn, Jackson Town, O , improved cultivators.

Joseph Walker, Dover, Eng., improvement in hulling cotton seeds. Patented in England, July 20, 1854.

Wm. P. Zane, Woolwich, N. J., improved cultivators for sweet potatoes.

Abraham Gesner, Williamsburg, N. Y., assignor to 'The Asphalte Mining and Kerosene Gas Co.,' for processes for making Kerosene.

Smith Gardner, N. Y. city, assignor to Edward Kellogg, of Brooklyn, N. Y., improvement in the manufacture of zinc white.

R. M. Wade, Wadesville, Va., improved lubricator.

Henry W. Adams, New-York, improvement in factitious oils.

James P. Arnold, Louisville, improvement in presses.

Richard Baker, Newark, improvement in the manufacture of white lead by precipitation.

Abel Baker, Honesdale, method of lubricating pistons of air pumps.

Chester B. and Benj. S. Borden & Aaron R. McLean, of West Dresden, N. Y., improvement in seed planters.

Louis Bollman, N. Y., improvement in condensers in steam engines.

Thos. Brown, London, England, improvement in ship's riding bits.

Levi M. Dehart, Reading, Pa., adjustable paddle wheel.

Richard V. DeGuinon, Brooklyn, improvement in anchors.

Sam. W. Frost, Boston, improved safety port for coal holes.

Thomas Goodrun, Providence, R. I., improvement in valves for steam engines.

Robert B. Gorsuch, New-York, direct acting hyraulic steam pump.

Smith Groom, Troy, improved hose coupling.

Thomas J. Hall, Tawakana Hills, Texas, improvement in plows.

Gustavus Hammer, Cincinnati, O., improved valve for wind musical instruments.

Luther Houghton, Philadelphia, improved mode of loading rifled cannon.

Barton, H. Jenks, Bridgeburg, Pa., improvement in looms. Ante-dated January 8, 1855.

Benjamin F. Joslyn, Worcester, for double-acting pump.

Wm. J. Keeney and James R. Tarbox, Switzerland Co., Ind., improvement in rakes and hay elevators.

Geo. Martz, Pottsville, Pa., improved apparatus for hoisting and dumping coal cars.

Ebenezer Mathers and Wm. D. Seigfried, Morgantown, Va., apparatus for feeding paper to hand printing presses.

James B. Mell, Riceboro', Ga., improvement in cotton gins.

Henry Mellish, Walpole, improvement in lancets.

F. H. Moore, Boston, improvement in coal hole covers.

Rollin White, Hartford, Conn., improvement in breech-loading fire-arms.

Thomas Moore, Fair Haven, Vt., improved stove-pipe tube.

Andrew Murtaugh, N. Y., improvement in pulleys for dumb waiters.

Ives W. McGafty, Syracuse, improved seed planter.

Fred. A. Peterson, N. Y., fire-proof ceiling.

Stephen R. Roscoe, of Carlisle, N. Y , fire escape ladder.

Alpheus D. Smith, Meredith, N. Y., improvement in railroad car seats.

Arcalous Wyckoff, Columbus, O., chain pumps.

Charles and Anna C. Wilhelm, Philadelphia, improved protector in lamp shades.

C. Gustav Maeller, Charleston, improvement in bank locks.

Rollin White, Hartford, improvement in repeating fire-arms.

Rollin White, Hartford, improved repeating fire-arms.

Noah Warlick, Lafayette, Ala., improvement in plows.

C. Williams, Jackson, Tenn., improved excavating machine.

Enos Woodruff, Elizabethtown, N. J., mechanism by which approaching vehicles open and close gates.

Francis L. Smithson, Mecklenburgh county, Va., improvement in cultivators.

Hiram Strait, Covington, Ky., improved arrangement of means for freeing steam boilers from sediment.

Geo. H. Soule, of Jersey City, improved breech-loading fire-arms.

Wm. Stoddard, Hingham, Mass., improvement in folding beadsteads.

Benjamin T. Trimmer, Parma, N. Y., improved grain cleaner.

Geo. W. Edgcomb, Lima, Ind., improvement in washing machines.

Charles Clarent, N. Y., assignor to himself and Geo. P. Field, improvement in harrows.

Ozro A. Crane and Henry J. Lewis, Green Point, N. Y., assignor to Ozro J. Crane, aforesaid, improvement in scrapers for removing dirt from boots and shoes.

John Hartshorn and Dexter H. Chamberlain, Boston, assignor to John Hartshorn, aforesaid, improvement in fixtures for curtain rollers.